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ASCITES IN HYDERABAD (DECCAN)*

A PRELIMINARY NOTE

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INTRODUCTION

During his early medical training over thirty years ago the senior author acquired an impression that most cases of ascites when not due to cardiac failure were attributable to cirrhosis of the liver; that alcohol played an important role in the causation of cirrhosis; that the prognosis in cases of ascites was a uniformly gloomy one. It came to him as a welcome surprise when he had better opportunities of study about ten years ago, to find that contrary to expectation some of the cases which had required repeated paracentesis, not only recovered but remained in good health for about three years during which he kept in touch with them. This indicated that ascites is not invariably the result of cirrhosis, that recovery is possible in some cases at least, and that the subject of the causation and treatment of this condition deserves further study.

This paper which is in the nature of a preliminary note is published more with a view to obtain helpful data from workers in different centres than as a positive solution of the problems of the ætiology and treatment of ascites.

INCIDENCE AND ÆTIOLOGY

Ascites, *i.e.*, the presence of a recognizable amount of free fluid in the peritoneal cavity is seen fairly commonly in Hyderabad. With a view to make a rough estimate of the incidence and the pathological conditions with which it is associated, an analysis of the case records of the Osmania Hospital for two years (1940-41) was made. The results showed that, out of a total number of 32,364 in-patients, (17,869 males and 14,495 females) 490 (263 males and 227 females) patients had ascites; in other words, one in every sixty-six persons ill-enough to seek treatment as an in-patient showed ascites.

On comparing these figures with those which we have been able to obtain from some other hospitals in India and those of the Massachusetts General Hospital (Cabot, 1921), some interesting facts are brought out (*see* table 1). Cardiac insufficiency is found to be associated most frequently with ascites in Massachusetts (45·45 per cent), Bombay (67 per cent) and Delhi (37·18 per cent) while in Vizagapatam and Hyderabad it accounts for only 23·3 per cent and 27·5 per cent respectively. On the other hand, cirrhosis of the liver accounts for a higher percentage both at Vizagapatam (46·3 per cent) and Hyderabad (28·5 per cent); the incidence of this condition at Massachusetts (10·05 per cent), Bombay (12 per cent) and Delhi (8·9 per cent), being definitely lower. Even after making due allowance for differences arising out of a possible overlapping of causes in the classification of ascites cases (*e.g.*, anæmia with congestive heart failure being classified at one place under diseases of the heart while at other under anæmias), it would appear from this that cirrhosis of the liver has a higher incidence in the South-Eastern parts of India where rice is the staple diet of the people than in the North-Western regions where *jawar* and wheat are the staple diet. The Hyderabad State consists of two main parts, the Western Marathwada where *jawar* and to some extent wheat form the staple food and the Eastern Telangana where rice is the staple article of diet. The data obtained by us from the Medical Officers are not yet sufficient to show clearly whether the incidence of ascites in the two sets of the population differs as much as between Bombay and Vizagapatam.

Further, malaria seems to be an important factor at Gwalior and also at Mysore (according to a private communication by Heilig based on a rough estimate). Beri-beri as a

* This investigation is being carried out with the aid of a special grant from the Osmania University and the Indian Research Fund Association. Read at the Scientific Section of the XIX All-India Medical Conference, Patna, April, 1943.

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cause of ascites is conspicuously absent in all these places except Bombay (Sulakhe, 1942) where a low incidence (1 per cent, the cases being among Chinese inhabitants) is recorded. It is interesting to note, however, that Weiss and Wilkins (1937) consider heart disease due to nutritional deficiency more common than congenital heart disease or subacute bacterial endocarditis in a certain section of the population in Boston. In over 18 per cent (90 cases out of 490) of the cases in Hyderabad no definite cause is ascribed. This important finding will be discussed later.

Post-mortem Study—A study of the post-mortem examination records from the Pathology Department of the Osmania Medical College revealed the presence of ascites in 86 out of a total of 340 autopsies; *i.e.*, one in every four of the cases (or 25·29 per cent) coming to the post-mortem table showed ascites. This agrees remarkably closely with Vizagapatam post-mortem records where 277 cases out of a total of 1018 autopsies (or 27·21 per cent) showed ascites, whereas the incidence at Massachusetts is definitely lower, being 10·1 per cent (224 out of 2217 autopsies) while Bombay occupies an intermediate place having 20 per cent (151 out of 3,000 autopsies). On comparing the causes of ascites as ascertained by post-mortem

TABLE I

Comparative statement showing the incidence of Ascites and the principal disease conditions associated with it based on clinical diagnoses.

Incidence of ascites

	Massachusetts	Bombay	Delhi	Gwalior	Vizagapatam	Hyderabad
Total no. of Cases of Ascites	3074	280	78	25	69	490
Percentage of all Admissions	—	1·5	7·6	2·6	—	1·2

Incidence of associated disease condition

S. No. Disease	Massachusetts Total No.	Massachusetts Per-cent.	Bombay Total No.	Bombay Per-cent.	Delhi Total No.	Delhi Per-cent.	Gwalior Total No.	Gwalior Per-cent.	Vizagapatam Total No.	Vizagapatam Per-cent.	Hyderabad Total No.	Hyderabad Per-cent.
1. Cardiac insufficiency ..	1397	45.45	188	67	29	37.18	6	24	15	28.8	185	25.55
2. Renal diseases ..	665	21.69	36	18	14	18.2	...	...	10	14.5	52	10.6
3. Cirrhosis of the liver ..	325	10.05	34	12	7	8.9	1	4	32	46.8	140	28.5
4. Peritoneal tuberculosis	268	8.59	17	6	15	19.2	1	4	4	5.8	27	5.5
5. Peritoneal carcinosis ..	58	1.72	2	1	2	1.8	...	...	2	2.9	11	2.24
6. Anæmias	15	0.49	...	...	4	2.6	...	...	3	4.4	33	6.78
7. Leukæmias	11	0.35	...	...	1	0.65	...	...	...	...	...	...
8. Visceral syphilis ..	4	0.18	...	...	1	0.65	...	...	...	...	..	...
9. Malaria	...	...	...	...	...	...	12	48	...	...	...	...
10. Beri-beri	...	...	8	1	...	...	...	...	...	...	...	...
11. Chronic peritonitis ..	...	...	...	...	...	...	5	20	1	1.4	...	...
12. Indefinite causation ..	...	...	...	...	2	1.8	...	...	...	...	90	18.36

TABLE II—*Showing the incidence of Ascites and the principal disease conditions associated with it as found on post-mortem examination.*

Incidence of ascites

1. Massachusetts 10·1% of ascites in all post-mortems (224/2217).
2. Bombay 20% " " " (151/3000).
3. Vizagapatam 27·21% " " " (277/1018).
4. Hyderabad 25·29% " " " (86/340).

Incidence of associated disease condition

S. No. Disease	Massachusetts Total No.	Massachusetts Per cent	Bombay Total No.	Bombay Per cent	Vizagapatam Total No.	Vizagapatam Per cent	Hyderabad Total No.	Hyderabad Per cent
1. Cardiac weakness ..	98	43.75	48	32	52	19.1	20	23.25
2. Diseases of peritoneum	62	27.04	8	2	62	22.1	11	12.78
3. Renal diseases ..	26	11.5	15	10	14	5.14	10	11.62
4. Cirrhosis of the liver ..	24	10.26	33	22	70	25.72	25	29.2
5. Pulmonary & intestinal tuberculosis ..	...	...	1	0.6	26	9.56	1	1.16
6. Anæmias	...	...	3	2	15	5.51	6	7.14
7. Dysentery	...	...	1	0.6	21	7.58	5	5.22
8. Beri-beri	...	...	...	...	5	1.84	1	1.16
9. Pellagra	...	...	1	0.16	...	...	...	...
10. Indefinite causation ..	...	...	2	1.3	9	3.3	8	3.44

LEGEND

Signs	Places	Total no. of autopsies	No. of cases of Ascites	% of Ascites in total autopsies
M	Massachusetts	2217	224	10.1
B	Bombay	3000	151	20
V	Vizagapatam	1018	277	27.21
H	Hyderabad	340	86	25.29

FIG. 1. Histogram showing causes of ascites from post-mortem records of the different hospitals.

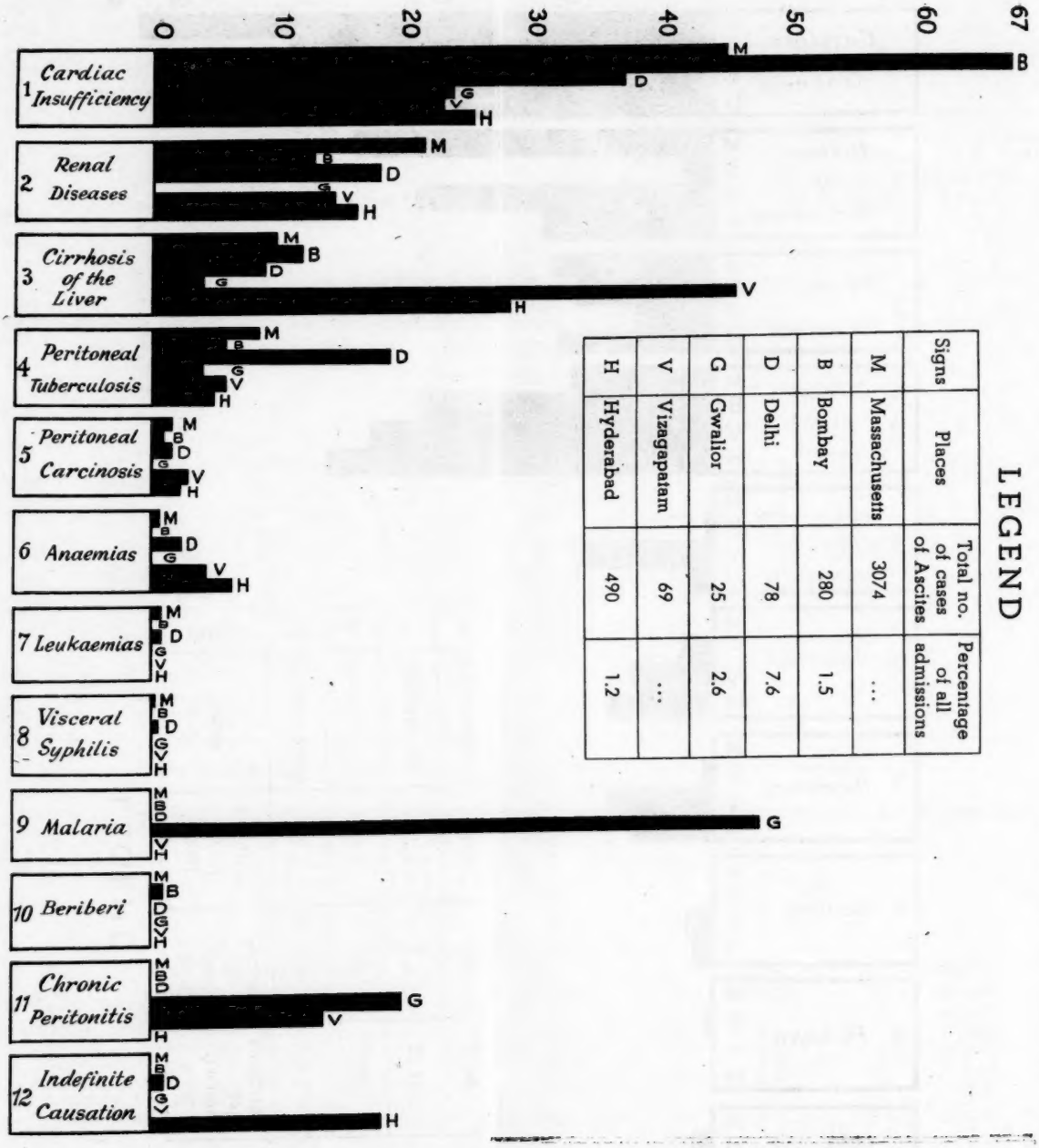

FIG. 2. Histogram showing causes of ascites from clinical records of different hospitals.

examination (*see* table II) again it is seen that cardiac conditions are the most important in Massachusetts and Bombay while liver diseases account for a larger number in Vizagapatam and Hyderabad as shown below:—

	Place	*Heart*	*Liver*
1.	Massachusetts	43·75%	10·26%
2.	Bombay	32%	22%
3.	Vizagapatam	19·1%	25·72%
4.	Hyderabad	23·25%	29·2%

Further, pulmonary tuberculosis, anæmias and dysenteries which find no special mention in the Massachusetts figures are important in Vizagapatam and Hyderabad accounting for 22·78 and 14·06 per cent respectively. Ascites is ascribed to beriberi in less than 2 per cent of cases, while for about 3·5 per cent no definite cause could be ascertained even after a post-mortem examination (both at Vizagapatam and Hyderabad). Clinically, as pointed out above, in over 18 per cent of ascites cases in Hyderabad no definite cause is ascribed. This is much greater than the post-mortem figures (3·44 per cent). It is probably not wrong to conclude from this that a considerable proportion of these cases recover, at least temporarily, and do not go to the post-mortem table. It is this group of cases in which we are principally interested.

In response to a circular issued by us with the kind permission of the Director, Medical and Sanitation Department, figures of cases of ascites with remarks of the Medical Officers were received from various hospitals and dispensaries in Hyderabad State. From several centres cases of ascites, not definitely attributable to gross cardiac, renal or hepatic damage have been reported as recovered and in some cases, keeping good health for a fairly long period.

It may be stressed that while the recognition of ascites itself is a comparatively simple matter, it is not always easy to arrive at its cause; in fact, even the diagnosis of cirrhosis of the liver difficult and can be certain only on the post-mortem examination table. A quotation from Cabot (1921) may prove of interest here:

> "I have recently made a series of wrong diagnoses in cases of ascites. These failures, which were shared by some of the best diagnosticians in the country, suggested to me a study of the causes of this symptom. Until recently I had supposed that the diagnosis of the causes of ascites was one of the easiest in medicine. I was amazed to hear Dr. H. D. Rolleston say in 1909, that he considered the diagnosis of cirrhosis a very difficult one; but in the light of recent events I have come to agree with him."

On going through the list of causes of ascites tabulated in the Index of Differential Diagnosis by French (1928), we notice that beri-beri is not mentioned while semi-starvation comes as the last but one item in the list and multiple serositis without any apparent cause the last. In the discussion under this head, however, the following statement occurs:—

> "Semi-starvation as a cause of ascites is generally diagnosed from concomitant circumstances. It was common in Europe during the Great War. When people have been compelled by famine to subsist for long periods upon a dietary inadequate in variety as well as in amount, various illnesses of mal-nutrition may result. The total calories in the food eaten may suffice to maintain a bare existence but disease ensues. Beri-beri often with œdema of the legs, is a familiar result of long continued eating of decorticated rice as the main staple of diet; general œdema of the whole body, simulating Bright's disease, was often met with in Germany and Russia from famine dietary in the war; and a certain number of people suffering from anasarca from this cause exhibited ascites as part of their general œdema."

Age—Coming to our own hospital case records, a detailed analysis of the group of ascites cases without any definite cause attributable on clinical examination shows that out of a total of 90 such cases there were 58 males and 32 females; and by a curious co-incidence, 58 Hindus and 32 Muslims. The age distribution is as follows:—

TABLE—III.

Between 15 and 25 years	.. 5 cases	or 5·5%
„ 25 and 40 „	.. 30 „	or 33·3%
40 years and above	.. 55 „	or 61·1%
Total	.. 90 cases.	

It is worth noting here that very few cases of infantile cirrhosis or ascites have been reported—only 12 cases out of a total of 653 from Hyderabad and the districts together. The table above shows that most of the sufferers are in the active period of life and that males are slightly more affected than females. The religion seems not to make much difference.

Ascites and Œdema—Since the commencement of the enquiry in July last, 90 cases of ascites with or without œdema as well as cases of œdema without ascites have been studied in the Osmania Hospital. Total cases studied from 26th July, 1942 to 25th March, 1943—90 cases. The classification of these is as follows:

TABLE—IV.

Sex Distribution	
Males	.. 76
Females	.. 14
Total	.. 90

Distribution of Ascites and Œdema	
Ascites without oedema ..	.. 25 cases.
Ascites with oedema ..	.. 44 „
Oedema without ascites ..	.. 21 „
Total	.. 90 cases.

Occupation—The occupation of the patients are shown in table V (in page 6).

Associated conditions—These can be broadly divided into two groups—one the cases of ascites with or without Œdema and the other cases of œdema without ascites (Table VI & VII).

TABLE V. *Showing the occupation of the Patients*

Labourer	10 cases.
Cultivator	9 „
Petty Merchant	6 „
Sepoy	3 „
Toddy tapper	2 „
Tonga driver	2 „
Weaver	2 „
Student	2 „
Clerk	2 „
Private servant	1 „
No occupation	51 „
Total	90 cases

TABLE VI. *Showing the Associated Conditions in Cases of Ascites with or without Œdema (69 Cases)*

			Number	percentage
1.	Cardiac insufficiency		11	15·9
2.	Renal disease		6	8·9
3.	Tuberculosis		10	14·4
	i. Peritoneal	7		
	ii. Pulmonary	3		
		10		
4.	Cirrhosis of the liver		25	36·2
5.	Nutritional deficiency		9	13·0
6.	Other causes		8	11·5
	i. Malignant disease (secondaries in the peritoneum)	4		
	ii. Secondary stage of Syphilis	1		
	iii. Anæmia	1		
	iv. Leukæmia (lymphatic)	1		
	v. Chronic dysentery and mal-nutrition	1		
	Total	8	69	

TABLE VII. *Showing the Associated Conditions in cases of Œdema without Ascites (21 Cases)*

		Number	Percentage
1.	Nutritional deficiency	11	52·3
2.	Beri-beri	2	9
3.	Anæmia	3	14·2
4.	Nephritis	2	9
5.	Cardiac failure	1	5
6.	Leukæmia (Myeloid) and severe anæmia	1	5
7.	Pulmonary tuberculosis	1	5
	Total	21	

Grand total of (VI)+(VII)=69+21=90 cases.

NUTRITIONAL DEFICIENCY AS A CAUSE

A short description of some illustrative cases is given at the end of the paper. The clinical picture, treatment and progress of the group of cases classified under nutritional deficiency can be described as follows:

Clinical Picture—The patient is weak, hardly able to walk and in cases of ascites suffers discomfort on sitting up. There may be only ascites or œdema or both; resembling sometimes, in external apperance at least, a case of Bright's disease. The pulse rate does not differ markedly from normal; the blood pressure is low, 105/75 mm. Hg or even lower figures being not uncommon. The heart may be dilated in some cases with distress on slight exertion, while in others it appears to be normall. The lungs on physical examination are usually clear. The appetite is fairly good. The bowels are constipated but there is occasional unacccountable diarrhœa. There may or may not be oliguria; usually there is no albumin in the urine or only a trace and no casts or blood cells are found. The stools are positive for hookworm ova only in a few cases. There is no appreciable tenderness of calf muscles and no anæsthesia. The blood picture shows a varying degree of anæmia of a hypochromic type without abnormal type of cells. The blood urea and cholesterol were found within normal limits. The kidney function was fairly good as indicated by the phenolsulphonaphthalein test.

Treatment—The patients were placed on a bread and milk diet (Baker's bread 20 ozs., Milk 21 ozs. with butter 1/8 oz. daily, besides sugar and tea; caloric value about 2,000) with a sweet lime; yeast powder about half an ounce made up into a confection with syrup was given with the bread. In the initial stages an occasional intramuscular injection of a mercurial diuretic (Neptal 0·5 c.c.) was given. The routine mixture was:

R/

Pot. Acetas	gr	10
Spt. Aetheris Nit	m	20
Tinct. Digitalis	m	10—15
Inf. Scoparii	ad	oz. i

oz. 1 t. d.

A dose of magnesium sulphate was given when necessary.

Course—The response to this line of treatment was very satisfactory. The oliguria, when present, was replaced by free diuresis. The ascites and œdema rapidly diminished without paracentesis or the use of Southey's tubes; there being a loss of bodyweight from ¾ to 1½ lbs. per day. In less than a week the patient was able to sit up without discomfort and in a few days more able to walk about. On now allowing a more liberal diet the œdema did not recur; the improvement being maintained and real weight without œdema gained. The course of most of these cases is afebrile. After discharge, however, a relapse of the condition (œdema) was noted in some cases. An attempt is being made to follow the progress of such cases by post and by personal visit where possible.

DISCUSSION

Our observations have not proceeded far enough to enable us to make any statement regarding the share of malaria, dysentery, syphilis or hook-worm infection in the aetiology. It may however be mentioned that of 86 cases of ascites examined post-mortem, evidence of dysentery was found only in 5 cases and that hook-worm does not seem to be as common here as in Vizagapatam where according to Radhakrishna Rao (1933) almost all cases of portal cirrhosis showed hook-worm infection, or in Mysore where according to Heilig (1941) at least 60 per cent of the Hospital patients are found to be infected. It would, therefore, appear that apart from other conditions, a poor diet, defective in quality and quantity plays an important part

in the ætiology, though its mode of operation is not clear. Regarding the condition of the various physiological systems, as described above, the blood pressure is generally low but we do not find the typical bradycardia or enlargement of the heart of beri-beri, in which the occurrence of ascites is not described clearly in the text-books. Sheube (quoted by McCarrison, 1928) mentions its occurrence in 50 per cent and Yamagava in 40 per cent (quoted by McCarrison, 1928) of cases, whereas according to Vedder (1938) ascites was present in 9 out of 64 cases (14 per cent) in Java, and 5 out of 125 cases (4 per cent) in Malaya; the amount of fluid in the peritonium being seldom large enough to cause much distension. Tenderness of calf-muscles (or other signs of neuritis) again is not a striking symptom in our cases. As regards the urinary system oliguria is sometimes present, in some cases, albuminuria only. The oliguria, however, is soon replaced by diuresis under rest and diet.

In our attempt to compare the cases of ascites associated with different pathological conditions we noticed that patients with cirrhosis of the liver have oliguria as an important feature of the clinical picture and that this does not respond to the routine treatment described above for the nutritional cases, and in some cases does not yield even to mercurial diuretics. These cirrhosis cases usually come at a fairly advanced stage. Our clinical diagnosis was, where possible, confirmed on post-mortem examination.

In performing paracentesis we have tried to ascertain the pressure of the ascitic fluid. On connecting the cannula with a vertical tube, positive pressures of even 4 inches of fluid above the auricular level were observed with large acccumulations. The intraperitoneal pressure in the normal condition and even in moderate sized accumulations is nearly zero. Does this fluid in any way act as a support to the weakened vessels of the portal area and hinder too rapid a transudation? The question is important from practical point of view because loss of large amounts of fluid containing albumin, through frequent paracentesis has a weakening effect on the patient; anyhow our present policy is to avoid paracentesis except when the accumulation itself gives rise to much physical discomfort.

It is difficult to account for oliguria in cirrhosis of the liver. In this condition, until the late stages, the urine does not show evidence of gross renal damage such as the presence of casts or impaired urea concentration or a rise in the blood urea. According to Cushny's theory urine is secreted as plasma minus proteins in the glomeruli and concentrated by re-absorption of fluid and threshold bodies as it passes along the tubules. Oliguria with a high concentration of solids would, therefore, indicate an increased reabsorption rather than a defective secretion..

Coming back to our cases of indefinite causation, certain important questions require a more critical study and solution.

(*i*) Are these cases merely a-typical forms of beri-beri, famine (starvation) œdema, endemic ascites and avitaminosis, or merely early stages of cirrhosis of the liver? We had occasion to watch the course of one such case for nearly two years. On his first admission the patient had ascites and œdema which improved rapidly on hospitalisation so much so that he was put down as a nutritional case, but his condition relapsed after discharge and the rate and amount of actual improvement obtained on subsequent admissions became progressively less until he presented the fully developed picture of cirrhosis, and died with symptoms of liver failure. At the post-mortem examination the liver was found to be cirrhotic.

In another case (case 1 below), which we had diagnosed as "Nutritional ascites", the ascites disappeared with rest and suitable diet alone. After this the patient began to show signs of pyloric obstruction confirmed by radiologic examination. He was operated on and at the operation the peritoneum and the liver appeared healthy.

(*ii*) What is the explanation of the peritoneal transudate? Is it of the nature of the transudate we get in "idiopathic pleurisy"; or is it due to circulatory stagnation or actual obstruction in the portal circulation? Is its function a protective one as in inflammatory pleurisy. Does it indicate a physical damage to the vessels of the portal area allowing an increased amount of transudation or is there a lack of absorption by the peritoneum? The rapid recovery is against the existence of a physical obstruction in the portal system. Injections of an easily detectable substance such as sodium iodide into the peritoneum before paracentesis yielded interesting results in cases diagnosed clinically as cirrhosis of the liver; in one case the observations were:

(*a*) Sodium iodide injected into the peritoneum= 500 mgms.

(*b*) Recovered in the ascitic fluid after two hours= 112·5 mgms. (22·5 per cent).

(*c*) Sodium iodide absorbed from the peritoneal cavity in the first two hours=387·5 mgms. (77·5 per cent).

(*d*) Sodium iodide recovered from urine passed during first three hours after injection=25 mgms. (5 per cent).

In another case iodide in the urine could be detected qualitatively within a short time after injection. These observations show that absorption, at least of crystalloids like iodides, does still take place in the peritoneum. These observations are being continued.

Conclusions

Subject to correction in the light of further observations the data so far obtained indicate:—

1. That cirrhosis of the liver is more common in Hyderabad and Vizagapatam (rice eating regions) than in Bombay or Delhi (*jawar* and wheat eating regions) where cardiac diseases seem to preponderate.

2. Ascites with or without œdema and œdema without ascites are much more common in Hyderabad State than previously realized. While a large proportion of cases of ascites are associated with cirrhosis of the liver, there is a considerable percentage in which the occurrence is attributable to defective diet and this condition is seen during normal peacetime, not only in a state of famine.

3. Its occurrence mostly in the rural working class population of low economic standard and the absence of any recognisable disease of the heart, kidney, liver, etc., and rapid recovery under hospitalisation suggest the condition to be the result of prolonged general mal-nutrition. It is curable by proper dietetic treatment.

4. It does not correspond to the text-book descriptions of beri-beri, though some cases presenting a fairly typical picture are also seen in adults as well as in infants.

ACKNOWLEDGMENT

We wish to express our thanks to the Director, Medical and Public Health Department, H.E.H. the Nizam's Government, Hyderabad (Deccan), and the Superintendent, Osmania Hospital, Hyderabad, for giving us the facilities to carry out this work and also to the authorities of J. J. Hospital and the K. E. M. Hospital, Bombay; the Lady Harding Hospital, Delhi; J. A. Hospital, Gwalior; and the Krishnarajendra Hospital, Mysore, for kindly supplying us with necessary statistics.

THE ILLUSTRATIVE CASES

Case (I) Ascites and œdema—Pyloric Stenosis.

Komriah, male, Hindu (Kapu), aged 30 years, Agricultural labourer from Karimnagar District was admitted on 1-1-43 for enlargement of the abdomen and indigestion for the last three months; swelling of the feet and legs appeared 15 days ago. He is married and has four healthy children. His diet at home consisted of home-pounded rice and *jawar* bread with chutnies, vegetables and butter milk daily; occasionally meat; takes a little toddy now and then and smokes moderately. No history of malaria or dysentery; history of diarrhœa (without blood and mucus in stools) lasting for about ten days prior to the onset of ascites and bleeding from the gums now and then. *On examination*, the patient was very emaciated and unable to stand without support; there was ascites (the circumference of the abdomen being 32·5") and œdema of the scrotum and lower extremities. The heart was pushed up by the fluid in the abdomen, the apex-beat in the 3rd inter-space in the nipple line; the right border was not shifted; the heart sounds were normal; the pulse rate was 82 per minute, regular and the blood pressure 118/90 mm., Hg. There was a moderate degree of dyspnœa and a little cough, the lungs were found normal on clinical as well as on x-ray screen examination. The liver and spleen were not palpable; the bowels were regular. There were no neurotic symptoms. The knee-jerks were a little sluggish, the sensations were normal. There was no oliguria, and no albumin or casts in the urine. *The blood picture:* total red blood corpuscles 4,690,000 per c.mm; Hb 77 per cent, colour index 0·8, no malaria parasites were found in the blood film. The blood urea was 27·8 mgm. per 100 c.c., the cholesterol 175·4 mgm. per 100 c.c. and the chlorides 0·468 per cent., W.R. negative, renal function was found to be satisfactory by phenol-sulphonephthalein excretion test (38·3 per cent in the first hour and 20·8 per cent in the second hour). His weight on admission was 104 lbs. (with ascites and œdema).

The patient was placed on a diet of bread and milk and the routine mixture (Tinct. Digitalis m 10 and Diuretic mixt. oz. i, t.d.s.). His weight came down to 81 lbs. on 11-1-43 (a loss of 23 lbs. in 10 days); there was no œdema now and the ascites was much less (the circumference of abdomen now was 23·75", a reduction of 6·75" in 10 days). His weight on 28-1-43 was 72 lbs. and the circumference of the abdomen 22·5". Now there was no ascites or œdema. No paracentesis was performed; neither were mercurial diuretics given. On 23-1-43 for the first time the patient complained of severe pain in the epigastric region and vomiting. *On examination* there was visible peristalsis of the stomach and radiography after a barium meal showed "Heavy 6 hours residue in the stomach, cap not forming—pyloric obstruction". The gastric contents after a test breakfast (Ewald's) showed a free acidity of 46 and total acidity 53 (Ewald scale). On careful questioning the patient now gave a vague history of periodic attacks of epigastric pain for the last three years. There were healing ulcers over the epigastrium due to marking nut applications which had been used for this complaint.

The patient was operated on 6-2-43 by Dr. M. Munawar Ali, F.R.C.S.E., 3rd Surgeon, Osmania Hospital. On opening the abdomen a little free fluid was still present though clinically he was free of ascites; the peritoneum and the liver were found healthy and the diagnosis of pyloric stenosis was confirmed. A posterior gastro-jejunostomy was performed. The patient progressed without any complications. The ascites did not recur and the patient is putting on a little fat and he is now able to walk about and feels energetic. He is still under observation.

Note: The dietary of the patient as stated by him did not appear particularly poor. The course of events seems to have been incomplete pyloric obstruction, want of absorption of sufficient nourishment but with absorption of water—thus in effect, bringing about starvation of solid food while liquids were absorbed—, resulting in ascites and œdema.

It is worth noting here that during operations for pyloric stenosis, certain amount of free fluid is occasionally found in the abdomen without evidence of malignant diseases or peritoneal tuberculosis. Large accumulation of fluid as in this case are however uncommon. It would be interesting to know the experience of other surgeons.

Case (II) Ascites and Œdema—Nutritional deficiency.

T. R. Hindu, Kunbi, male, beggar, aged 28 years, of village Naigaon, Yeotmal District, Berar, was admitted on 16-11-42 for enlargement of the abdomen and swelling of the feet and legs, of three months duration. His diet consisted chiefly of *jawar* bread. For about a month prior to the onset of œdema he used to get daily attacks of fever with rigors. He was found very weak, emaciated and rather anæmic (R. B. C. 3·5 millions Hb. 70 per cent; C.I. 1·0). There was ascites and œdema on the feet and legs. The veins of the neck were not prominent; nor were distended veins visible over the abdomen. Blood pressure was 110/80 mm. Hg. Liver and spleen could not be felt on account of the distension of the abdomen (on 26-11-42 when this was reduced, they were both found to be enlarged by 2 fingers). The calf muscles were not tender; knee-jerks were present, there was no anæsthesia. There was no oliguria; the urine did not contain albumin or casts; stools were negative for helminthic ova. Blood films showed no malarial parasites.

He was placed on a diet of salt-free bread and milk. A "mixture" consisting of Sod. Bicarb gr. 10, Ol. Cinnamoni m 1, Aqua fl oz. 1 was given thrice daily. Except for a rigor with rise of temperature to 101° on one day (23-11-42) the course has been afebrile. Quinine ten grains per day was given for 3 days after this.

His weight was 77 lbs. and abdominal circumference 25" on admission. On 21-11-42 these had come down to 71 lbs. and 23·5" (a loss of six pounds in six days). On 27-11-42 these were 70 lbs. and 22·25".

There was very little œdema or ascites. The patient though weak was more cheerful and able to walk about. From 26-11-42 he was allowed a mixed diet. The improvement continued until full recovery occurred and he was discharged on 31-12-42.

Case (III) Ascites and Œdema—Nutritional deficiency.

V. Hindu, Brahmin, male, poojari, aged 35 years, of village Gambhirao pet, Karimnagar District, was admitted on 11-11-42 for enlargement of the abdomen, swelling of the legs, feet and scrotum, discomfort in the abdomen—duration 15 days. The patient is married but has no children. His diet at home consisted of home pounded rice, chutnies and pickles; occasionally vegetables, milk and butter milk. Patient gave a history of attacks of fever with rigors commencing two months ago and continuing for about a month and a half. He has had bleeding piles for the last ten months.

He was slightly anæmic. There was ascites, the circumference of the abdomen being 32·5" and œdema on the scrotum, the legs and feet. There were two external piles. Neck veins were prominent only when lying down; the abdominal veins not prominent. The apex-beat of the heart was in the 4th interspace medial to the nipple line; area of dullness not increased; cardiac sounds normal, pulse 52 per minute, regular; Blood pressure 100/75 mm. Hg. The knee and ankle jerks were

present; no anæsthesia; no tenderness in the calf muscles. The spleen and liver were not palpable. There was no oliguria; urine showed no albumin or casts; no ova in stools. Blood—R. B. C. 3·2 millions, Hb. 60 per cent, W. R. doubtful positive.

The patient was placed on a diet of salt-free bread and milk with a sweet lime and yeast half-an-ounce daily in the form of confection; and Tincture Digitalis and diuretic mixture. His weight on admission was 131 lbs. A mercurial diuretic (Neptal 1 c.c.) was injected on 16-11-42 with a good diuretic response; the weight came down to 116 lbs. on 21-11-42 with diminishing œdema and ascites; it further came down to 103 lbs. on 28-11-42 (a loss of 28 lbs. in 17 days). Now there was no œdema anywhere and only a small quantity of fluid in the peritoneum (the circumference of the abdomen being 28″ on 29-11-42). The patient was discharged on 29-11-42 on his own request. A recent letter received from him shows that he is keeping good health and that ascites did not recur.

Case (IV) Ascites without Œdema—Nutritional deficiency.

M. male, Hindu (Kapu), cultivator of vilage Chennigaram, Taluq and District Karimnagar, aged 40 years, was admitted on 28-8-42 for enlargement of the abdomen, loss of appetite and digestion, tingling and numbness in the legs and occasional headache of one month's duration. He gave a vague history of attacks of fever with rigors recently and of passing mucus in stools. He had been admitted in the hospital for the treatment of ascites a year ago and was relieved. His usual diet at home was home-pounded rice, vegetables and curds occasionally. *On examination* the patient was moderately nourished and slightly anæmic. The abdominal veins were prominent even on lying down and there was visible jugular pulsation. There was ascites of moderate degree but no œdema anywhere. Nothing abnormal noted in any system. The urinary and hæmatological findings were normal, blood urea and cholesterol were within normal limits; W. R. negative; no ova in stools. His weight on admission was 109 lbs.

The patient was placed on a diet consisting of salt-free bread and milk and Acid Hydrochlor Dil. and Inf. Calumba mixture. His weight was 108 lbs. on the 12th day after admission. An injection of mercurial diuretic, Neptal 1 c.c. was then given with a good diuretic response and the weight came down to 105 lbs. on the 3rd day after the injection. Now there was practically no ascites. The patient was therefore allowed a mixed diet without salt restriction with extra Chappaties and a sweet lime daily. He now began to put on real weight; it was 110 lbs. on 23-9-42. His appetite and digestion improved and subjectively he was feeling better and inclined to go home for field work. He was therefore discharged on 23-9-42. The patient reported on 10-1-43 that there is no recurrence of ascites and he is able to work in the fields.

Case (V) General Anasarca without Ascites (? Beri-beri).

Sattayah, male child, Hindu, aged 3 years was admitted on 8-2-43 for swelling all over the body and loss of appetite for the last month and a half. Nothing particular in family history; the child's diet at home consisted of milled rice and chutnies; vegetables and meat only occasionally. The mother gave a history of diarrhœa lasting for about 12 days before the onset of œdema. *On examination,* the child was extremely weak and unable to stand. He had the hoarse whispering cry described in text-books under infantile Beri-beri. There was œdema on the face, trunk, hands, feet and legs and on the penis; rawness and fissures at the angles of the mouth (angular stomatitis); the skin was rough and scaly and was peeling at different places. The heart rate was 64 per minute, irregular in rhythm and force but there was no dilatation; no murmurs on auscultation; the liver and spleen were not palpable and the lungs were clear. The urine was scanty but no albumin or casts were found on examination. The blood showed an R. B. C. count of 3·2 millions per c.m.m., and hæmoglobin 64 per cent; malaria parasites not found. The child was placed on a bread and milk diet with yeast, tomato and sweet lime juice and thiamin (vitamin B_1) 3 mgm. subcutaneously daily. The œdema at first diminished and the child was now crying vigorously and asking for more food. From 11-2-43 a mixed diet was allowed but the œdema increased; and the stools showed undigested food. A calomel powder (gr. 1/2) was given to open the bowels and the diet cut down to milk and bread. On 23-2-43 the œdema was much less, the child was crying vigorously and the heart rate was 80 per minute, regular. On 27-2-43 there was very little œdema and that too only on the feet and pulse quite regular, and tension good; the child looks brighter and is still under observation.

Case (VI) Œdema without Ascites—Nutritional deficiency.

M. S. A., male, Muslim, aged 55 years, teacher, of Mahabubnagar District, was admitted on 16-9-42 for swelling of the legs, feet and hands of 15 days duration. Nothing special noted in the past history. His diet at home consisted of rice, meat and occasionally vegetables. *On examination* the patient was weak, unable to get up from sitting position and to walk easily. There was œdema on the legs, feet and hands. The apex-beat of the heart was a little displaced outwards in the 5th inter-space ½″ lateral to the nipple line; cardiac sounds normal. pulse 80 per minute, regular; blood pressure 116/54 mm. Hg. The blood picture did not show any anæmia. The spleen and liver were not palpable. There was oliguria but no albumin or casts in the urine. No ova found in stools.

The patient was placed on a diet of salt-free bread and milk and diuretic mixture with digitalis for the first ten days of stay. His weight on admission was 114 lbs. It came down to 91 lbs. on 2-10-42, and there was no œdema. Mixed diet was then allowed and he started gaining in weight (93 lbs. on 9-10-42). The patient was now able to walk about without much discomfort and he was discharged on 11-10-42. There was no œdema and his weight was 95 lbs.

Case (VII) Œdema without Ascites—Nutritional deficiency.

Y. R., male, Hindu, (Kapu), aged 55 years, cultivator in Bhongir Taluq, District Nalgonda, was admitted on 3-11-42 for swelling of the feet and legs and pain in the right hypochondrium of 15 days duration. Nothing of importance in past history. His usual diet at home consisted of home pounded rice, milk, butter milk, vegetables and occasionally meat. *On examination* there was œdema on both the legs and feet but no ascites. The apex-beat of the heart was in the 5th inter-space medial to the nipple line, cardiac area of dullness not increased and the sounds normal; pulse 68 per minute regular, blood pressure 155/85 mm. Hg. The liver and spleen were not palpable. The knee and ankle-jerks were present; only slight tenderness on deep pressure in the calf muscles of right side; sensations normal. No oliguria; no albumin or casts in the urine. No ova found in stools; the blood showed an R. B. C. count of 4 millions and the hæmoglobin was 70 per cent; W.R. negative. Weight on admission 103 lbs.

The patient was placed on a diet of salt-free bread and milk and mixt. diuretic with digitalis. On the fourth day the weight came down to 100 lbs. and on the 8th to 92 lbs. It was 87 on the 10th day after admission (loss of 16 lbs in 10 days). There was now very little œdema and the patient was able to get up from sitting position easily and walk about without any discomfort. A more liberal diet was allowed, the œdema completely disappeared and the patient was discharged on 26-11-42.

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ELECTRO-SURGERY OF TONSILS*

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INTRODUCTION

Electro-surgery of tonsils is now well recognised in other countries but is not yet commonly practised in India. I sent a questionnaire in 1940 to all the hospitals attached to the Medical Colleges and Schools in India, Burma and Ceylon and was surprised to find that out of 17 colleges and 27 schools approached, only 3 colleges and 2 schools were doing a few cases. The actual figures for all India for 1938 are K. E. M. Hospital, Bombay, 6; Medical College Hospital, Calcutta, 8 and Medical School, Agra, 1—a total of 15 cases in all. This, indeed, is a poor annual record. The details of the enquiry has been published by the author (Ahmed, 1940).

Place of Electro-Surgery in Oto-Laryngology—Laryngologists everywhere believe that when indicated and feasible surgical tonsillectomy is the best available method. 'Indicated and feasible' are however, the limitations of ordinary surgery. The result is that, in inoperable cases, diseased tonsils go on undermining the health of their victims and palliative measures proving ineffective the medical science appears to look helpless in the matter. It was actually so till electro-coagulation was introduced which according to Dillinger (1930) is "the only new method that has been presented in tonsil surgery within the past two hundred years". The medical science is, therefore, no more helpless in the matter because in the words of Gross (1932) "electro-coagulation is indicated in direct ratio to surgical contra-indication". As for the safety and feasibility Dillinger believes that "there is no operation which has so many serious complications when they do happen as does the surgical tonsillectomy." We, of course, know that an experienced laryngologist with his expert team of assistants, anæsthetists and necessary modern equipment has made the operation safe and simple but only see an expert and an ordinary surgeon operating on a tonsil and you will soon realise why primary and secondary hæmorrhages, severe shock, post-operative pneumonia, abscess and gangrene of the lungs, secondary infection, œdema and sloughing of soft tissue, scar and atrophy of anterior pillars with their after-effects are so common after the operation. I strongly believe that post-tonsillectomy complications like lung abscesses are not rare in India but they appear so, because we have not got the opportunities to follow up our cases and the patients who get these complications generally do not approach the original surgeon for relief. However, it is expert aid that makes such a difference and expert aid is comparatively rare in India and so the complications are common and the feasibility and safety of ordinary surgical tonsillectomy in this country are so very limited. Electro-surgery of tonsils in India, therefore, assumes a very great importance as it is a very safe and efficient office procedure of great promise and utility with practically no contraindication and no serious complications if done with reasonable care and due respect for the usual details.

Problem of the big hospitals—A number of prominent laryngologists of India have told me during personal conversation why they do not adopt the method in their hospital practice. They say that apart from the time factor and lack of proper equipment and facilities, the patients in a provincial hospital are not all drawn from local population. They come from all over the province and can not afford to visit the hospital again and again. They come ready for the operation and wish it done in one sweep.

Problem in private practice—As for not taking it up in the private practice the reason may be that once a patient is convinced and decides that his tonsils may be out it is better to remove his tonsils at once before he changes his mind. It is financially sound also to have full fees for a job in one sitting. With electro-coagulation a patient through inconsistency or definite relief after the first few applications is apt to discontinue the treatment with or without a possible detriment to his own health, but with a definite financial loss to the specialist. But all such considerations cannot, by any stretch of imagination, be considered as scientific contra-indications to electro-surgery of the tonsils. One stage coagulation method is there to answer these objections but I do not advocate it as in my opinion it does not possess the advantages of slow method and is not very superior, at least, at this stage of its evolution. to ordinary tonsillectomy.

ADVANTAGES

After doing a series of tonsillectomies by guillotine, dissection and electro-coagulation I was so impressed by the overwhelming advantages of the latter that in 1935 I began to keep written details of the cases with a view to have a recorded idea of the value of electro-coagulation. During that year I got a very complicated case of a girl aged 14 years whose tonsils I removed in four sittings in 18 days. The result was so striking that I noted down the advantages of electro-coagulation as compared to cutting operation under her case-record. I am now convinced of the advantages and am copying down here from my register what I wrote in March 1935:—

> (1) No bleeding, pain or swelling whatsoever (2) No bad after-effects of the operation. She could eat and drink after operations without any pain or trouble. (3) No weakness after operation. On the contrary the health improved markedly as the steps of the operation continued. (4) The patient got confidence and desired the treatment herself. The last remaining portion of the left tonsil was removed on her own request. (5) Time and anxiety of the actual operation minimised to nothing as each sitting did not take even more than a minute for actual coagulation. (6) Hospitalisation or confining the patient to bed was not necessary. The patient used to attend my consultation room and go back to her residence immediately after the operation. Absence of shock, hæmorrhage, postoperative

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reaction and complication and after-effects of tonsillar operation like traumatism of musculature and impairment of functions and ease of application, are the outstanding advantages of this ambulatory office procedure which is within reach and capabilities of ordinary surgeons and even of careful and intelligent general practitioners.

Disadvantages

It is impracticable where electric current is not available. It is a slow method and would not suit those who wish to get their tonsils out in a day for reasons of their own but an expert and experienced operator could successfully coagulate both the tonsils in one or two sittings in very special circumstances and I have often undertaken one, two or three-stage coagulation in some cases.

Case—Coagulation of tonsils in 2 sittings—A man aged 22 years wanted to get his tonsils removed by coagulation in as short a time as possible. I coagulated whole of his left and half of his right tonsils in one sitting. The reaction did not differ in any way from that of a slow coagulation. The remaining half was coagulated in 2nd sitting after 6 days. This case shows that even one or two stage operation is not only possible but safe and painless if done with due care and full attention to the details but in spite of my own happy experiences I do not advocate it for routine work.

Indications

It is generally indicated in all those whose tonsils need partial or total enucleation. They must be able to keep their mouths open for a few seconds at a time and should be able to visit a surgery twice a week for a month or so. It is specially indicated in the circumstances when ordinary operation is contra-indicated. The following are its usual indications:—

1. *Bad tonsils with chronic disease*—When tonsile are the seat of dangerous septic absorption but tuberculosis, syphilis, goitre, rheumatism or other lesions of heart, kidney and lungs make general anæsthesia impossible and the operation hazardous, electro-surgery should be resorted to break the vicious circle by immediately and directly proceeding to remove the septic foci without waiting for an improvement in other diseased systems. An actual case will illustrate the point very clearly.

Case—A 20 year old married girl had tonsillitis with fever and cough for last six years and swelling, redness and pain in joints at each attack of tonsillitis for one year. She had a number of calcium injections for suspected tuberculosis and a variety of injections for painful joints. Admitted into an ear, nose and throat department of a provincial hospital attached to a medical college and discharged after 12 days of observation and treatment, as unfit for tonsillectomy. A laryngologist, after giving prolonged private treatment, failed to make her fit for tonsil operation which was the only hope of the cure of her troubles. She was brought to me. My examination showed (1) A completely broken down constitution. Temperature of 99° to 100°F. No acid fast bacili in sputum. (2) Bunches of inflamed, large and tender lymph glands on both sides of neck. (3) Knee joints and right inner clavicular joint swollen red, tender and painful. (4) Harsh sounds and definite râles on both apices of lungs. Heart-sounds weak and hæmic murmur present but no other bruit. (5) Tonsils fairly enlarged, ulcers on the surface, crypts and depressions full of pus all over and a big cavity full of pus in the middle part of the right tonsil. (6) Granular pharyngitis present. (7) Nasal mucosa inflamed. *Treatment*—complete extirpation of tonsils in stages with quick sterilisation of right one by coagulation was advised. 1/3rd of her right tonsil was coagulated and cavity sterilized by sparks in first sitting. Felt post-operative pain and could not eat solids for four days. Slight bleeding occurred on third day which stopped by itself. Second application after a week was painless and uneventful. She got an attack of tonsillitis after the third application which took ten days to subside. She was free from all the troubles in a month after the 5th application. Five more uneventful applications were required to completely remove the tonsillar tissue. She was a changed woman in two months. Her heart, lungs, lymph glands, throat and joints became all normal. She gained weight rapidly.

2. *Acutely inflamed big tonsils causing mischief*—There are cases in which big septic tonsils cause great mischief when acutely inflamed. They resist routine treatment and remain inoperative. Electro-coagulation then comes to the aid. An actual case will show the point.

Case—Tonsillitis with painful joints resisting routine treatment—A college student aged 22 years with history of tonsillitis for 14 years had acute rheumatic fever with joint involvement in 1931 and was cured in two months. Brought on a stretcher from Aligarh to Gaya in 1935 with a similar attack. Tonsils were very much enlarged and acutely inflamed and heart was in a very bad condition. As the slightest movement resulted in acute pain in his joints, I advised sterilisation of tonsils by few coagulating contacts to subside the acute attack and then to remove the tonsils to prevent further attacks. The very first contact gave relief and after three applications he was free from all pain and inflmmation and began to walk about. Declined further treatment. Had another severe attack after a year. Salicylates in big doses, atophanyl, auto-vaccine and phylacogens gave no relief. He suffered for two months and was then brought to me. I advised removal of tonsils. Surgery was contraindicated. Coagulation was done. Only partial removal was effected, when he discontinued the treatment. He remained free from attacks for four years years when I lost sight of him. This case shows the value of coagulation in giving instantaneous relief when other remedies fail and surgery contra-indicated.

3. *Septic tonsils, small, embedded and irremovable*—Huge big tonsils are not always dangerous but it is an embedded

small septic tonsil or a worm-eaten remnant of it that defies surgical removal and treatment. A case will clearly bring out the point.

Case—Septic tonsils, small embedded and irremovable causing immense trouble—A religious head of a community in Bihar was treated by me for chronic bronchitis at Gaya in 1936. He began to have cough, loss of weight and evening rise of temperature in 1937 and was diagnosed as a case of tuberculosis of the lungs at Patna. He saw me at Lillooah in 1938. He was, then, having severe asthmatic attacks and very troublesome cough. No acid-fast bacilli in his sputum. Wassermann reaction of blood was negative. He was radiologically negative for tuberculosis. He had small septic tonsils so embedded and worm-eaten that surgical removal was found impossible by specialists. He had enlarged and inflamed inferior turbinates as well. I advised coagulation. Only surface coagulation was possible. He was free from cough and asthmatic attacks after the second application and was free from all the troubles after the removal of infected tonsillar tissues and a few coagulating contacts to the turbinates. He has no trouble now except occasional morning cough in the winter.

4. *Tags and Remnants of operated tonsils*—Remains of tonsillar tissues after operation keeping up infection and often getting as troublesome and even more than the originally bad tonsils are frequently met with in practice. Ordinary surgery, proves helpless in dealing with them. Electro-surgery with its needle electrode is the only method which could remove them easily and give relief from their mischief.

Case—Post-operative remanants of tonsils causing mischief—A man aged 21 years was operated at Lahore by a famous British Surgeon for frequent attacks of tonsillitis. After a year his attacks recurred and he suffered for a few years before he saw me. His right tonsil was about ¾ the size of a normal one and was hard and fibrosed. There were very hard tags and nodules; on the left as well. Right anterior pillar was also damaged. These remnants used to get so much enlarged during an attack as to cause obstruction to food, drink and breathing. Surgical removal was not possible and was refused by surgeons. No other remedy gave him any relief. Five applications were needed to get rid of the hard fibrosed tonsillar tissues on both sides which gave complete relief and freedom from further attacks.

5. *Nervous and Unwilling patients*—There is a big group of patients in India who dread surgery in any form. They simply cannot reconcile to the surgeon's beneficial knife. They are generally chronic sufferers well acquainted with the initial success and later uselessness of all gargles, paints, inhalations and even suction. They readily submit to any method other than a knife. Electro-surgery is ideal for them and there could be no justification in depriving them of this up-to-date aid. Then there are people who hate hospitalisation or can not afford to undergo the discomfort of operation and its after-treatment, who would easily agree to visit a consulting room twice a week for half an hour or so, as to get their tonsils out in a few weeks. A case of a business man will show the suitability of this procedure in such cases.

Case—Enlarged tonsils with asthma-like attacks in a nervous patient—A 39 year old busy businessman had huge big tonsils causing obstruction to breathing. He then began to get easily out of breath in the day after slight exertion and troublesome asthma-like attacks in the night. A specialist advised removal of tonsils but he dreaded surgery for fear of hæmorrhage and hospitalisation for waste of time. I coagulated his tonsils in 9 applications which he took in 5 months. His asthmatic attacks and dyspnœa on exertion disappeared after two applications taken in 20 days. Some remnants were left in the end but as he felt absolutely alright he did not get them coagulated. He preferred coagulation as it was safe and did not interfere with his multifarous duties.

6. *Partial removal and general sterilisation of tonsils*—Tonsils have functions to perform in the body. They are believed not only to act as filters for pathological organisms and protectors of lungs but also as depots for vaccine production for immunisation of body against bacteria in early life but when bacteria grow abnormally in numbers or virulence the tonsils show hypertrophy and cause obstruction and later on become septic foci for generalised infections. Total extirpation of tonsils in all the stages is, therefore, not necessary. What is required in many cases is a partial removal say to the level of pillars to remove obstruction and a reduction of the number of bacteria in the tonsillar tissue by sterilisation or obliteration of surface and supra-tonsillar crypts to avoid their being reservoirs of general infections. Palliative measures temporarily reduce the size but can not clean crypts and recesses. Suction gives some relief. Partial removal by ordinary surgery is not only useless but positively dangerous because in removing a portion of the tonsils it creates a bigger area of raw surface for dangerous absorption of bacteria and their toxins. Electro-coagulation is the only safe method available to us for the purpose. Two or three applications are often enough to remove the required portion of the tonsils as well as sterilisation of crypts and surrounding areas. Coagulation thus makes partial removal of tonsils not only justifiable but actually beneficial in case of young patients.

Partial removal—Dan Mckenzie, the distinguished British Laryngologist stated in his report on diathermy coagulation that "it destroys the bacteria sepsis in the tissue adjoining the field of operation", and expressed his view in his book that "experience may yet show us that the total extirpation of the gland is unnecessary so long as the supra-tonsillar and surface crypts are destroyed or obliterated". Skillern of Pennsylvania University after his researches on electro-coagulation of tonsils remarked, "in those cases that have received two or more treatments, I found that the heat necessary to destroy the tonsillar tissue had to all appearances destroyed the infecting organisms within the depths of the crypts". This knowledge opens up a new era in the treatment of tonsillar hypertrophy and focal infection and proved to a skeptic that partial removal

of tonsils by electro-coagulation is not the same thing as an incomplete removal of tonsils by guillotine. My own observations and experiences in this line make me fully agree with the remarks of W. A. Gross of Chicago, who observed that "after all why should every tonsil be entirely destroyed. It is my opinion that in future this partial removal will be commonly practised.....If a remaining portion of tonsil becomes subsequently infected it will be necessary only to give a few more treatments."

I cite a case from my records to support this point of view:

Case—Mildly septic enlarged tonsils causing troublesome cough—A girl aged 10 years, healthy and robust had severe throat cough specially at night for four months. Her tonsils were enlarged but looked healthy. A laryngologist advised tonsillectomy. I advised a few coagulation contacts, as a trial, to sterilise the tonsils before surgical removal. After one application to each tonsil, the cough suddenly disappeared. One more application was given to the right to reduce its size. The girl is perfectly alright and had no cough or any other throat trouble for the last three years.

Sterilisation of tonsillar tissue—As for the immediate beneficial effects of the coagulation which are due to quick sterilisation of tonsils Dan Mckenzie, Dillinger, Haiman, Hickey, Gross and many other prominent workers in the field as well as all those who have some experience of the procedure are unanimous in acclaiming that marked improvement is noticed in stiff and painful rheumatic joints, cardiac conditions, lumbago, neuritis and such other secondary symptoms of tonsillar infection after the very first or second application of diathermic coagulation. Some interesting cases from my records are cited to support the points mentioned in this section.

Case—Tonsillar abscess with colic and diarrhœa—Married girl aged 16 years had septic tonsils with multiple pus points and the right suppratonsillar crypt forming a bag of pus. She had an attack of quinsy a month ago. Surgical removal contra-indicated and also refused by the patient when advised. She began to have severe colic and had 3 to 4 loose motions a day for about 4 months, and consulted me for the latter trouble. I advised coagulation of the septic tonsils. Her colic disappeared after the second application and diarrhœa after the 3rd. Pus continued to ooze out after the 1st and 2nd applications but after the 3rd, discharge of pus suddenly stopped. The case shows the dramatic relief, from sequelæ of tonsillar sepsis, that coagulation gives through quick sterilization of the tissues.

Case—Enlarged tonsils with deafness—A 16 year old boy suffering from enlarged septic tonsils from childhood got earache and discharge and then gradually became deaf in four years. Wassermann test negative. Surgical removal was advised in the beginning but was dreaded by patient's father. Surgical removal was found contra-indicated later on by a specialist. Severe attacks of tonsillitis were initiated even by a drink of ice-cold water. I coagulated his tonsils. He was free from the attacks after the 4th application. After the 6th application even ice-cream taken 4 times a day for a few days as a trial did not give him the attack. His left ear became normal but a slight deafness was left on the right.

Case—Tonsillitis with rheumatic joints and heart—Girl aged 7 years had attacks of cough, fever and sore throat for 4 years. Last attack accompanied with painful joints that crippled her for a month. Surgical removal of tonsils was contra-indicated due to heart condition and acute sepsis. Tonsils were coagulated. Joint pains disappeared after 2nd application. Cough and fever gone within 12 days. Girl seen after 15 months had no cough, fever, sore throat nor joint pains. Heart still showed bruit.

7. *Professional singers and speakers*—Pillars of tonsils are nothing but folds of mucous membrane over pharyngeal muscles which help in deglutition and proper pronunciation and utterance of certain words and sounds. Pillars are generally safe in expert hands but injury to anterior pillars during guillotine operation is not rare and even when there is no apparent injury to them they often get atrophied a few weeks after the operation. This is totally avoided if electro-surgery is practised. The latter is, therefore, the ideal procedure to be recommended to such people with absolute guarantee for the safety of their voice after the removal of tonsils.

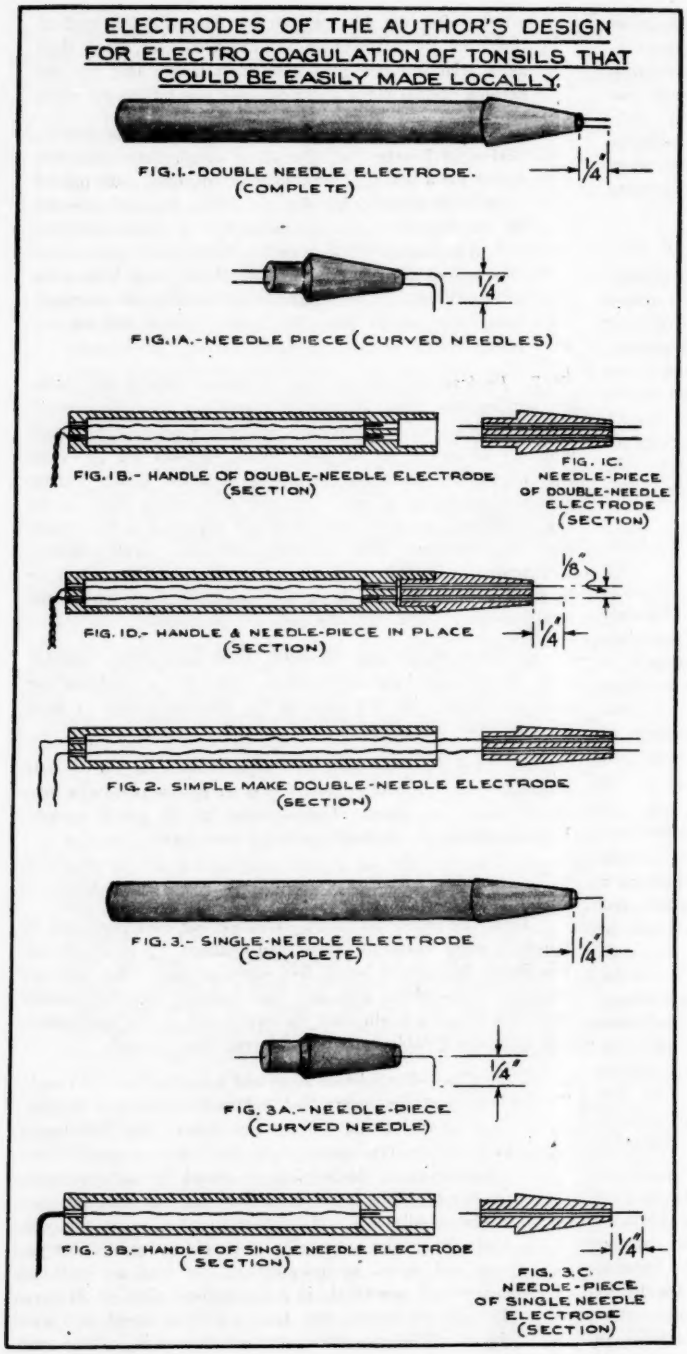
8. *Hæmophilics and Bleeders*—True hæmophilics patients with abnormally long coagulation time are a problem for ordinary surgery but are quite fit for electro-surgery. I have no experience of such a case.

9. *Aged Persons*—Ordinary tonsillectomy is not a safe procedure in adults and is positively a dangerous one for a man of 40 years or above. Hæmorrhage is the chief danger. Electro-surgery is absolutely safe for such cases.

Contraindications

There are indeed no contra-indication but electro-surgery of tonsils is more suited to adults than children. It is almost not practicable in patients below five years of age. They are not expected to co-operate with us. They can not keep their mouth open and do get a fright after the experience of first application, but there are notable exceptions among them as well.

Case—Coagulation in a child aged five years—A male child aged five years had inflamed throat and troublesome cough off and on for two years. He then began to have vomiting every night for last few months and regurgitation of fluids taken by mouth through the nose. His tonsils were found to be very big which almost met in the middle line. His father dread surgical removal. I advised partial extirpation of tonsils to remove obstruction and sepsis by coagulation. It was accomplished under local anæsthesia in 3 applications given in 20 days. The patient became free from vomiting, cough and sore throat. This case shows that coagulation is possible even in young children to remove obstruction and healthy lymphoid tissue could be left without impunity.



Technique

Equipment.

1. *Machine* (*Fig. 6*)—I use Siemen's Thermoflux D with adjustable spark-gap and attachment for dessication. The latter was specially made for me by Siemens locally at Calcutta.

2. *Electrodes*—I used Negal Schmidts' single-needle and German-made bipolar electrodes in the beginning but am now using electrodes which I get locally made under my own supervision.

(a) *Bipolar electrode*—(*Fig. 1*)—It has revolutionised the coagulation technique which has now become exact, controllable and scientifically accurate. I use this electrode for a few initial applications but when isolated points and nodules of tonsillar tissues are left behind I use a single-needle electrode.

(b) *Single-needle electrode* (*Fig. 3*)—This has to be used with an indifferent electrode. I use a lead-sheet 6"×4"×1/16" covered with a piece of turkish towel soaked in saturated saline solution on which the patient sits or which is tied to the back or thigh. Inspite of the inconvenience of an indifferent electrode I somehow feel more at home with single-needle electrode than with the bipolar one.

Local construction of electrodes—I get bipolar and single, curved or straight needle electrode made in two pieces:—

(i) *Handle* (*Fig. 1B & 3B*).—It is an empty vulcanite barrel of a medium sized cheap fountain pen with two metal pieces insulated from each other and so fitted at one end that thin wire lead could be attached to one pole and the needle of the other piece could have contact with the other.

(ii) *Needle-piece* (*Fig. 1A, 1C, 3A & 3C*)—It is a piece of varnished wood holding the needle insulated from each other so constructed that one end fits into the handle to make a contact between the needles and the metal pieces inside the handle and from its other end the needles, straight or curved, so project that the distance between then is 1/8" and their length 1/4".

(iii) *Another simple method* (*Fig. 2*)—By this method the electrode is made by passing the leads through the lumen of the handle and attaching them directly to the ends of the needles in the needle-piece. The handle is meant only for convenience of holding and passing the leads through it.

3. *Tongue Depressor* (*Fig. 8*)—I use a vulcanite one made for me Lynch & Co., Calcutta.

4. *Pillar Retractor*—I do not generally use it but it is a help to the beginners and in late stages of operation. It may be any suitable hook-retractor insulated by means of a rubber sleeve.

5. *A Forehead Light* (*Fig. 5*)—Forehead mirror is not suitable. I use a forehead-band with a bulb attached to it which could be energised from the mains to avoid battery system which is so unreliable. This light being fixed on the forehead of the operator near the eye getting the current from mains from which the machine is working is always available in whichever position the operator brings his head and eyes to see the field of operation and can only fail when the main goes off and in that case of course, the machine also goes out of function. This arrangement of light is very necessary as coagulation must proceed, to be safe, under the eyes of the operator in a good light. Light attached to the tongue depressor is very helpful but it also depends on batteries and hence unrealible.

6. *Special Table* (*Fig. 4*)—I have devised a special table which is not only used as treatment table but so wired as to receive current from the mains and distribute it through various sockets to machine, light and other sources. This table enables me to keep all the switches under my control and to cut off the current from mains to the table and to all the modalities and apparatuses whenever necessary.

Anæsthesia.

(i) *Topical Application*—I used cocaine hydrochloride 5 to 10% till the end of 1935 but am now using Pantocain 1 to 2%. I give a fine spray of ½% pantocain sparingly on the tonsils, pillars, uvula and surrounding spaces to avoid gagging. Too much of spraying gives a feeling of lump into the throat and suffocation and should be avoided. Three to five topical applications to the tonsils with a swab soaked in 1 to 2% pantocain are then given at 3 to 5 minutes' interval. The case is ready in 10 to 15 minutes for operation. This is enough in 99% of cases.

(ii) *Regional Anæsthesia* (*Fig. 7*)—One does meet a few cases in which topical applications are not enough from the very start and a good number of cases who get pain when the last remains of tonsils are being coagulated in very late stages of the operation. For such cases, I have found that the nerve-block is very simple and satisfactory method. Satisfactory anæsthesia is obtained by depositing a few drops

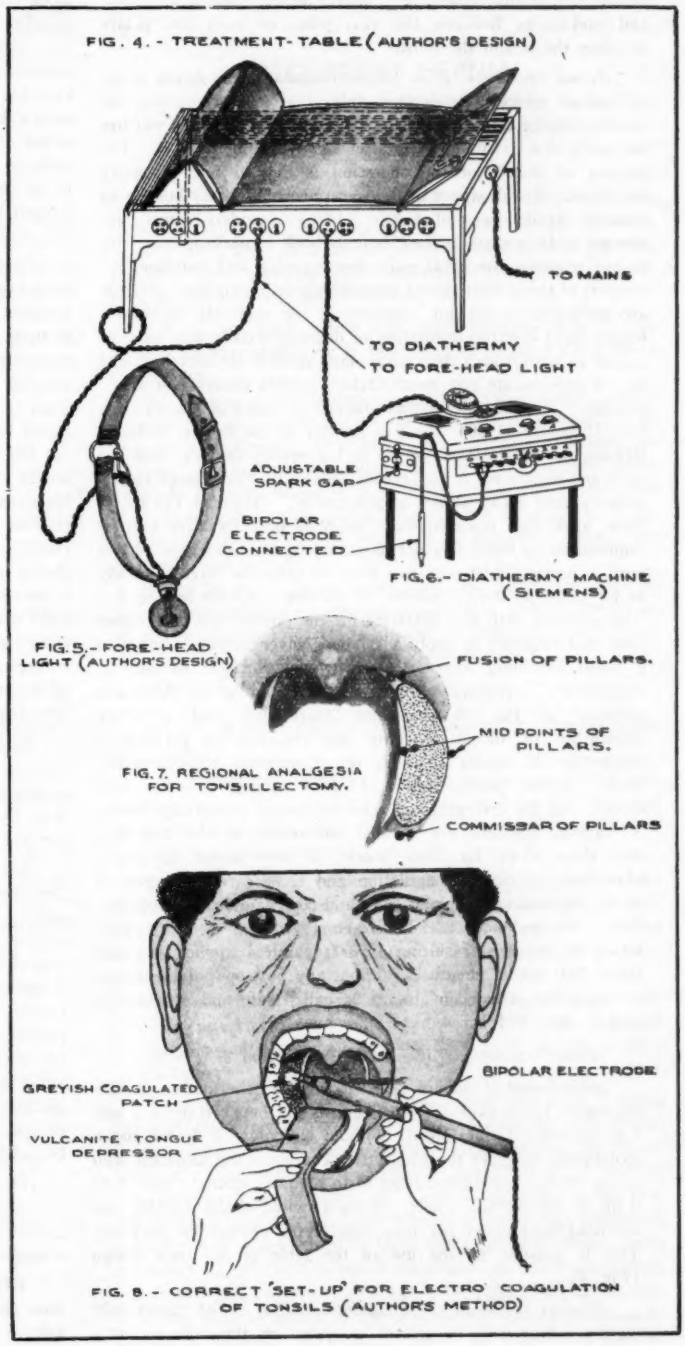


FIG. 4. - TREATMENT-TABLE (AUTHOR'S DESIGN)

FIG. 5. - FORE-HEAD LIGHT (AUTHOR'S DESIGN)

FIG. 6. - DIATHERMY MACHINE (SIEMENS)

FIG. 7. REGIONAL ANALGESIA FOR TONSILLECTOMY.

FIG. 8. - CORRECT 'SET-UP' FOR ELECTRO COAGULATION OF TONSILS (AUTHOR'S METHOD)

of 1% pantocain or 2% novocaine with a long curved tonsillar needle at 4 points—fusion of 2 pillars above, commissar below, and mid-points between the two poles of both the pillars avoiding the bed of the tonsils.

Actual operation—Slow electro-coagulation in stages is my method of choice. Dessication, fulgration and arc-cutting are not suitable for this work. I do sometimes use sparks to sterilize the walls of a tonsillar cavity after removing pus from it. The success or failure of the operation is due to fine or faulty technique. Novak whose method was probably faulty but whose remarks Hollander and Cottle (1936) considered important enough to be quoted in their famous book remarked, "the very severe reaction, the great pain, the toxæmia and extreme discomfort of the patient almost immediately following the operation are sufficient reason for condemning the methods—Whatever logical basis electro-coagulation of diseased tonsils may have or appear to have from a theoretical stand point is far overshadowed by the unfortunate and unsatisfactory results obtained in actual practice." But Novak's actual practice consisted of 7 cases only. Dan Mckenzie (1930) who was pioneer of the method in Great Britain, on the contrary, wrote in his equally famous book "so quiet and uneventful is the process, indeed, that even large tonsils seem to melt away almost imperceptibly." Haiman (1930) of New York also reported that "so little post-operative care is required as to make it superfluous to concern ourselves with it here." As for actual operation also, the opinions differ as widely as for post-operative reactions. Hollander & Cottle believe that "the technical skill and dexterity for the operation is no greater than that required to apply a swab of silver nitrate solution to a tonsil assuming familiarity with the technique of electro-coagulation." While Dillinger (1930), the great American authority on the subject opines "more skill and a better knowledge of throat anatomy are required to perform a diathermy of tonsils than to do a surgical tonsillectomy." After careful consideration I have come to the conclusion that the diverging remarks and happy or sad experiences of various workers are mainly the result of the technique that they adopt for their work. I have about 12 years' experience of electro-coagulation and have careful records of about 1200 successful applications and 6000 safe coagulation contacts. The technique that I have employed in a recent recorded series of 70 cases resulting in 500 painless applications and about 2000 needle punctures without any post-operative reaction or complication has a claim to be called safe and satisfactory and is described below.

Author's technique of Electro-Coagulation of Tonsils.—

Adjustment of machine:—I use Siemen's thermoflux D with adjustable spark-gap—the spark-gap is put between mark 2 and 3 to coagulate tissues slowly without charring. I do not use a foot-switch but give the rheostat in charge of my assistant who raises the flow of current from O to required strength and shuts it off on my signal. I keep the main switch of the machine and the head-light under my own control for emergency purposes. This is possible by the use of the table of my own design (Fig. 4).

Correct Set-up before Coagulation (Fig. 8).—I adjust light on my forehead. The patient is seated on the table or on a chair as convenient after local anæsthesia. An indifferent electrode serves as a seat when single-needle is used. The patient is asked to put his tongue out without contracting the muscle. This retracts the anterior pillar sufficiently for first few applications. If sufficient space is not available I ask the patient to keep his tongue in and let it be loose and flabby and I press it with a depressor which always gives enough space to work with safety. The vulcanite tongue depressor depresses the tongue and protects it from coagulating needle. I hold the tongue depressor in my left hand when no pillar retractor is used but the patient himself holds it when I hold the pillar retractor in my hand in late stages of the operation.

First Application.—I then holding the electrode in my right hand bring the needle just in contact with the tonsil and run the machine without passing the current through the electrode just to make sure that the set-up is correct and the patient reacting normally. After this sham application I dip the needle into the tonsillar tissue and signal to my assistant to raise the current from O up slowly. As soon as white or greyish ring appears round the needle (Fig. 8), I signal again to stop. I then take out the needle from the tissue and usually altogether out of the mouth and let the patient breathe. Sometime I do 2 or 3 punctures one after another taking out the needle from the tissue and re-inserting it at other spots without taking it out from the mouth. I usually do-not give more than 2 to 3 contacts at first sitting to judge the post-operative reaction but later on give 4 to 6 such contacts at subsequent sittings. It should be noted carefully that current runs through the electrode only when needle is inside the tonsillar tissue and at no other time. This needs correct adjustment of machine and coagulation time but avoids pillars, tongue and other tissues of the mouth coming in contact with the live needle by any form of accident.

Post-Operative Care.—The patient is asked not to take very hot, rough or hard food and drink on the day of application. He is also instructed not to do anything to cause premature separation of coagulated tissue and to report for second application after the white coagulation tissue disappears from the tonsil.

Subsequent applications.—The second application is given to the other tonsil. I do not give two consecutive treatments to one and the same tonsil but treat the two tonsils alternately. This enables me to give the application every 3rd or 4th day and gives a week for a coagulated part to separate easily and safely. 4 to 6 applications to each tonsil are generally enough to remove the tonsils completely. The patient may be asked to report if possible after 2 months of the treatment for final examination for coagulating any nodules or points that might have been left and have had enough time to grow and be visible. Simply placing the needle on such points and coagulating them will be enough. No dipping of needle into the tissue would generally be needed in such cases.

Important points to note for a successful operation:—

(*i*) Do not ever over-coagulate nor char the tissue by quick coagulation otherwise hæmorrhage may occur when coagulum separates.

(*ii*) Do not do extensive coagulation at one sitting otherwise post-operative reaction specially the pain would be troublesome.

(*iii*) Avoid touching and coagulation of the pillars specially the anterior one otherwise pain in swallowing and speaking, huskiness of voice, troublesome irritating cough and other consequences of a damaged pillar would be the result.

(*iv*) Septic and inflamed tonsils are no contra-indication for coagulation but avoid entering your needle directly in an infected crypt otherwise sealing of the crypt with a localised abscess under tension giving pain and fever would result.

(*v*) The coagulation must proceed in a strong light under your eyes. The appearance of a greyish ring round the needle (Fig. 8) and not so many seconds should be your guide, remembering that coagulation on all sides is almost double the thickness and length of the needle inserted into the tissues. As the removal of the tissue proceeds in stages the length of the insertion of the needle should become less and less till simply placing of the needle on the tissue should be enough to coagulate without damaging the deeper non-tonsillar structures.

(*vi*) Avoid the temptation to hurry up the separation of the coagulated slough for giving a fresh application in order to enable you to remove the tonsils in a short time. You will find that slough in some cases separates in 48 hours while in others it takes as much as 10 days. Let it have its time if you care for safety and success. I removed a 14 year girl's tonsil by 4 applications in less than 3 weeks and another six year old girl's in three months. This should give you the idea of the reaction of the tissues in different individuals and the need of your adapting to the varying requirement.

In the end, I may mention again that I recommed only slow coagulation in convenient stages as a safe procedure and advocate it strongly for routine practice. I strongly believe that it is the duty of every laryngologist to become familiar with electro-coagulation of the tonsils and to possess an up-to-date equipment for it.

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RECURRENT HERNIA

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Ever since Bassini had shown us the method of curing hernia, a controversy has been raging as regards the incidence of recurrence after such an operation. More recently varying statistics have been published stating the recurrence rate as between 0·1 per cent and 5 per cent.

I have not come across any communication here on the subject but my impression is that there is rather a great many recurrences.

The only scientific way of evaluation of one's surgical results or suitability of a particular method, depends on the analysis of response and progress of the cases after a surgical treatment for its cure. But no scientific follow-up system has yet been established in Calcutta hospitals as a routine procedure. We must also remember that associated factors such as the age of the patient, age of the hernia, etc. need scrutinisation before any conclusion is reached.

I will try to put below, a few facts that I have been able to gather from personal experience supported by similar experience of my senior, Dr. D. C. Chakraberty, Professor of Clinical Surgery, during operations on recurrent hernia.

Causes of Recurrences

Causes of recurrences can be conveniently grouped under four heads:

I. *Inadequate operation*—(A) Incomplete operation. Two points *viz.*, the fresh state of the tissue, with no big scar and the presence of a key hole type of scar give us clue to the fact that the first operation was done only partially.

In these cases, a vertical incision about two inches long over the external ring was seen. Recurrences were all indirect. With the exception of a few adhesive bands near the external ring, the rest of the canal was free from any sign of operative trauma.

The practice of removal of, as much of the sac as possible through the external ring without opening the canal and later carefully closing the ring round the cord, is, I believe, another potent cause.

In two cases of recurrent hernia, during dissection, I found the spermatic cord lying in front of the external oblique and ductus deferens with the cremaster lying within the canal. Obviously, this was not a deliberate modification (Andrews) but missing the steps and I am sorry to say that in the first encounter I did cut the vas, before I could appreciate the anomaly and since then I take extra caution about these secondary cases. In 6 cases of recurrence in congenital hernia (as determined by history and age only) on reopening no sign of dissection was found at the neck which was again probably left out altogether. These cases, due to the thinness of the sac, present difficulty in its isolation and was, therefore, missed.

(B) Simple removal of the sac. This is an accepted method of dealing with congenital herniæ particularly in children. Arguments that are put forth are, firstly, all herniæ are due to preformed sac and its removal would cure the condition; secondly, any repair of the muscular layer will further weaken the canal and hence should be omitted. There is some truth in these arguments but as herniæ do recur some modification of the attitude is reasonable.

Personally, I feel, this is to be limited to infants. In children above five years, anterior replacement of the cord with suturing the externus with the Poupart's ligament behind it is a preferable support to the canal.

(C) Bassini's operation (Standard operation) the latter part of which consists of suturing the conjoint (obliquus internus and transversus abdominis) tendon with the reflected part of the obliquus externus by catgut, and replacement of the cord in its original position with the split obliquus externus sutured above it.

That the conjoint tendon, which is only tendinous (or rather aponeurotic) at the medial half of its insertion but muscular in the rest of its extent, does not form any firm union with the inguinal ligament when sutured with absorbable catgut has long been stressed, so also is my observation.

On reopening the canal, varied pictures were seen. The commonest spot for non-union was found with rather monotonous regularity in the medial part of the canal; the tendinous part was always separated from the inguinal ligament without any attempt at union. The muscular part, on the other hand, sometimes formed fibrous union of varying density with the inguinal ligament. In a large majority of the recurrences (70 per cent) herniation occurred through this weak spot and had reappeared as direct one.

With this knowledge I would urge a revision of idea about simple Bassini's operation.

II. *Too short convalescence*—This is the next common cause of recurrence. The earliest case of recurrence that I have come across is one month after the primary operation. The case was discharged on the 10th day after operation as the union was primary and the man resumed his original work in the coal mine after a week.

Due to pressing demand on the hospital beds this aspect is often compromised and the patient is discharged rather earlier and not rarely without proper stress on the period of convalescence. The poor patients cannot afford to have prolonged rest at home as the need of earning is more pressing and hence they resume their strenuous work rather too early.

Mention may be made of the practice of advising the patient to wear a truss after an operation for radical cure, the implication of which I fail to appreciate. On the other hand, it is undoubtedly against the principle of physiological recovery of the muscle tone. But the few patients that I have been able to come across, seem rather pleased at this added care shown to them and providing a support to the weakened area.

III. *Infection of the wound*—In the presence of gross sepsis, the sutures give way and the recurrence of the hernia follows almost immediately and universally. Fortunately, this is rare.

Subcutaneous stitches occasionally give trouble but this has never been found to be the cause of recurrence. Statements have appeared that mild suppuration may be beneficial by providing dense fibrosis in the process of healing but this is a dangerous presumption. On the other hand, the aseptic inflammation with dense fibrosis to follow, is the rational object which is aimed at after injection treatment.

IV. *Postoperative strain*—Post-anæsthetic vomiting and cough that occasionally follow, by themselves, are rarely responsible for the recurrence of hernia. Certainly, the strain may produce hæmorrhage in the wound area and thus indirectly affect the sound healing. But in violent vomiting, deep stitches may be separated and thus recurrence may follow.

Nature of Recurrences

This, as already mentioned, in a large majority of cases reappears as direct hernia. It has been noticed also that a recurrent direct hernia has a better chance to become scrotal than the primary direct type. Recurrent, indirect hernia is practically limited to the congenital primary hernia and where only sac removal was done.

Prevention of Recurrences

The following are the measures by which recurrence of herniæ can be prevented:

(1) Selection of Cases: The careful selection of cases and correction of the exciting causes as far as practicable before undertaking an operation will go a long way to reduce the rate of recurrence. The following may be helpful in such a consideration:

Occupation—The work entailing paroxysmal strain, specially in the semi-stooping position is dangerous for such people. A prolonged convalescence and preferably complete change of occupation is required of them. *Chronic constipation*—It is hardly to be taken as an abnormality now-a-days, nevertheless, it should be corrected during convalescence by laxatives and regulated diets. *Difficult micturition*—Unless specifically enquired into, the history of stricture and enlargement of the prostate are often missed with disappointing result. They need correction before any operation is undertaken. *Chronic lung trouble*—A chronic bronchitic, though chance of recurrence is real in him, should not be denied an operation if not a bad surgical risk for other reasons. Prolonged pre- and post-operative care, selective anæsthesia and selective operation may bring about a successful result.

(2) Selection of Operation: One type of operation for all types of cases is not rational and has practically been given up and selection of the type for the individual case is the method of choice. Variations in the hernia operations are numerous, but out of them certain fundamentals have emerged which I think one should follow.

Standard Bassini's operation—The first half of the operation upto removal of the sac at the neck is of universal acceptance. It is the latter half regarding the repair of the canal that has been modified in several ways to the best interest of the patient. In very young subjects, I prefer the following modifications—(1) Narrowing of the internal ring, if the hernia is rather large, by a mattress suture through the trans-

versalis fascia. Care is necessary to avoid the deep epigastric artery which is an important vessel for the rectus abdominis. (2) Transposition of the cord anteriorly and suturing the split externus behind it (Halstead). This gives the additional support without damaging the muscular layer in any way. As I do not subscribe fully to Russel's view, I am not content with removal of the sac alone (except in infants).

The strength of the valvular mechanism of closing the inguinal canal, as described by Ogilvie cannot be judged during the operation. Variations in the development of the muscular part in proportion to the tendinous portion have been noticed but so far no factual relation could be established. Well-developed muscular belly has been found in recurrent cases practically as often as with more extensive aponeurotic condition of the internus whereas in cases of direct hernia, there has always been a lax and weak muscular wall in the canal zone.

Repair by the aponeurotic strip from the external oblique—This is a recent addition and from the result so far obtained, it well deserves to be practised. It is evident by the nature of the tissue to be used that any extensive repair of the canal is out of question, but is eminently suitable in cases of indirect inguinal hernia in young persons, just where one would have done a standard Bassini's. By substituting an autogenous tissue which becomes incorporated permanently in the repaired layers, one overcomes the objection of using catgut. It gives the needed strength to the plastic repair with a degree of ease that form an added attraction. To have a proper length it is necessary to cut the externus as far out as the muscular fibres and after separation of a strip of about quarter of an inch broad, a catgut is tied to the free end, thus giving further length for easy suturing. By keeping the tension towards the inguinal ligament and not pulling too tight one can avoid tearing of the ligament. Personally, I like the anterior transposition of the cord to complete the operation.

Repair by strips from the fascia lata of the thigh—Since the introduction by Gallie, it has been accepted as the best method of repair of herniæ of practically all sizes and conditions. The strips, two or three in number, taken from the fascia lata of the thigh, are used to repair the floor of the canal by darning. Though apposition of the conjoint tendon with the inguinal ligament should be made, too tight suturing should be avoided as that strangles the fibres of the internus. If the cord is pushed well laterally and suturing commenced close to it, one can omit the encircling sutures round the cord. The drawback, if any, of the operation is the rather prolonged time that one has to devote, specially if the surgeon is single-handed. My experience with fasciotome being nil, I can hardly add more than that stressed by others.

In suturing the thigh wound a continuous catgut suture is preferable, the only care needed is not to pull it very taut, as, otherwise, cutaneous gangrene will occur. Slight bulging of the quadriceps that persists in these cases, seems not to interfere with the function of the muscle, though mention may be made that Wakeley definitely holds the opposite view.

I beg to be excused to mention that one should take extra care of the fascial strips to keep them safely away in a separate kidney dish lest they may find their way with swabs to the floor.

Fascial darning by the Gallie's method, should then be kept for all recurrent herniæ. This also should be the method of choice in direct and big scrotal herniæ, as one invariably finds attenuated muscles with them.

Cases of strangulated hernia, present another problem as regards the repair of the canal, for which I do not see any solution. Though there is every indication for fasciaplasty, I dare not prolong the operation in an emergent condition. Moreover, the preparation and the condition of the tissues even in the absence of any inflammation of the contents, are not ideal for a plastic operation. Unfortunately, many of them recur within a very short time and rarely submit to another planned operation.

Repair by silk—Next to the autogenous tissue, silk should be accepted as the desirable material for hernioplasty. It gives rise to minimum of tissue reaction in comparison with other foreign materials and is very handy for darning work. Ordinary twisted silk can be used for co-aptation sutures but for darning work, untwisted floss silk is the best.

The difficulty one finds here is in obtaining a dependable and desirable material, and perhaps there is still some prejudice against using so much of foreign material. My experience in this matter is too limited to express any definite opinion on it. I had two failures, one recurred after eighteen months of repair by silk and another developed a subcutaneous abscess after three months of the operation and the suture for the obliquus externus was brought out in the secondary operation. Of course, this in no way affects the merit of the procedure, but having been disappointed in the beginning, one becomes rather hesitant to continue it.*

III. Some Selective Steps of the Operation: As already stressed, hernia operation is a reparative work and hence must be executed neatly and accurately. This operation, thanks to the advancement of our knowledge, is practically without mortality. But it is this safety which has brought forth an idea that it is a minor operation and can be handed over to the immature hands fresh in surgical practice. On the contrary, hernioplasty should be done only by those who have adequate experience in surgery, if the recurrence rate is to be diminished. A few steps may be detailed which one considers essential for ultimate satisfactory result.

(*a*) *Complete removal of the sac at the neck*—The neck must be clearly defined from the tissues around; a sharp look out being kept for any lateral saccule or extra peritoneal lipomatous mass and appropriately dealt with, The adipose masses mentioned, are often met with in old herniæ and in the obese and may obstruct view at the neck; if left behind, by their growth they will pull down a process of peritoneum and the hernia will recur. In this respect visualisation of the inferior epigastric artery is an important guarantee to clear dissection.

* Lately, I have tried in several cases silk darning and have been successful so far.

In congenital hernia, the sac is very thin, particularly at the neck, and the spermatic cord is always partly invaginated by it, thus necessitating a very delicate dissection to free it from the sac. If this is not done, either one leaves behind a process of peritoneum at the neck or incompletely occludes the sac, both tending to bring about recurrence of hernia of the indirect type later. Sometimes one may circumvent the difficulty of separation of the cord from the sac, by occluding the lumen of the sac at the neck by a purse-string put from within.

In direct hernia, the sac forms a globular bulge with a wide neck, quite unlike the indirect type; after due care to the bladder, the sac is opened, the redundant portion removed flush with the peritoneum and the opening then closed by continuous suture.

(*b*) *Hæmostasis*—Control of bleeding helps in the preliminary dissection of the operation, also later in healing of the wound. Hæmatoma, if formed, separates the layers and prevents firm union and itself becomes a potent cause of infection.

(*c*) *Identification of structures*—The inferior epigastric artery, iliohypogastric nerve and vas deferens should all be identified. The conjoint tendon should be defined and traced upto its medial attachment. Similarly, the inguinal ligament is cleaned of all areolar tissue and traced upto its attachment to the pubic tubercle.

(*d*) *Gentle repair*—Too tight sutures only strangle the muscle (internus) and cut through and also tear the inguinal ligament. Special care is needed for the repair of the medial half of the canal and in accurate suturing of the conjoint tendon with the inguinal ligament, a bite should be taken close to the bone. As practically all the recurrent herniæ that have been met with, appeared through this region, the need of careful repair of this area cannot be overemphasised.

IV. POST-OPERATIVE CARE: Some essentials are (*a*) *Support*—A firm bandage, including the scrotum should be put on while the patient is still under deep anæsthesia; after the patient has come round it is not only difficult to put the bandage properly but a violent cough may tear the deeper sutures. (*b*) *Position*—Low Fowler's is all that is necessary. (*c*) *Strain*—It should be avoided by symptomatic relief to cough and constipation. (*d*) *Convalescence*—That adequate period of three weeks rest in bed is essential. Resumption of activity must be gradual and no strenuous game or work is permitted before six months.

WHERE HERNIA HAS RECURRED

These patients are, as a rule, in despair and need a great deal of persuasion before they submit to another operation. A search should always be made to establish a probable cause of failure and if remediable should be guarded against. The actual curative treatment consists of hernioplasty by Gallie's method and there should not be any compromise on it.

A group of cases will always remain, where operation is not desirable and in such cases a wellfitted truss should be advised. Few cases with a tendency to visceroptosis, have been tried; a low abdominal belt with a truss incorporated within it seems to give more satisfaction.

AMYOTONIA CONGENITA

WITH AN ILLUSTRATIVE CASE NOTE

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INTRODUCTION

Oppenheim, in 1900, described a condition of infantile muscular atrophy, which goes by his name or amyotonia congenita. It is definitely a rare condition and often shows a familial tendency. A similar condition is often described as the Werdnig-Hoffmann atrophy and Krabbe (1920) tried to differentiate these two conditions on the basis of familial history, date of onset, localised atrophy and progress of the disease. But now the concensus of opinion is that both the diseases belong to the same group, "as a sharp differentiation between the two diseases in regard to the onset, familial history, location of atrophy and prognosis does not hold." (Grinker, 1927).

ETIOLOGY

Etiology is obscure and no injuring factor could be found out in any of the cases. When we group these cases together, we find that the cases are familial; apparently authentic and familial cases having been reported (Pearce, 1920; Allaban, 1924; Katz, 1927 and Guardjian, 1930). This is probably inherited as a Mendelian recessive. But in a family recorded by Sheldon (1941) the first child died of amyotnia congenita at five years, the second succumbed to progressive spinal muscular atrophy at twelve months and the fifth child was seen at three and a half years of age with advanced amyotonia congenita.

PATHOLOGY

Most notable work on the subject seems to have been done by Grinker. He has described changes both in the central nervous system and the muscles. Lesion in the Central nervous system consists of simple paucity of cells of the anterior horn. The remaining cells are small, rounded and poor in chromatin or long and fusiform. This is found in the lower motor nurone only, no change being found either in lateral or posterior horn cells.

The description of the lesions in the muscles by various observers differ somewhat in detail, but in general it may be said that some of the muscle fibres are hypertrophied, some are of normal size, but many are very small. The cross striations are usually retained. There is little replacement by fat and no considerable increase in connective tissue. The evidence of past or present degenerative processes is absent, or insignificant. The lesion is to be looked upon rather as a failure of development than a degeneration. On the negative side inflammatory reactions in cord, nerve, and muscle are notable for their absence unless as an incidental or *sub finem* complication.

The smooth muscles generally escape.

CLINICAL FINDINGS

The onset is at or before birth. The chief feature is a widespread atony of the muscles. All the muscles are not equally

involved. Lower limbs, arms, trunk, and face are usually affected in the order mentioned. In facial groups, the orbicularis muscles of the eye and rectractors of angles of the mouth are chiefly concerned; orbicularis oris and those of the tongue, jaw, and throat appear to escape, for the infant can, as a rule, suck strongly and swallow well. The child's cry is feeble as observed in the case reported. The affected child is inert, unable to do much more than to breathe. Paucity of movements is a prominent feature. The child, if sitting, tends to fall forwards and resembles a frog (Batten's frog child). This is a very characteristic sign of amyotonia. It cannot stand up. Owing to the weakness of the neck muscles the head can not be supported steadily on the trunk and it may loll about within the circle bounded by its attachments. The head appears to be too heavy and it droops forward on to the chest. There is often seen a great degree of passive hypermobility of the joints and along with it the loss of tone of the muscles make it possible for the limbs to be put into contortionist attitudes. The muscles are small and do not stand out on contraction. They do not show any fibrillary contractures. The method of propulsion, walking being impossible in bad cases, is peculiar; and the term 'buttock walking' has been invented to describe it.

The deep reflexes are constantly lost, sensation is not disturbed. The sphincters are normal, and the intellect is unclouded. General nutrition is well preserved. Deformities of chest and spine originate in the muscular condition. Electrical reactions (both currents) are reduced without being lost; polar changes have not been observed. Faradic contractility is usually much less than the galvanic as noted in the present case, but this observation does not constitute an 'amyotonic formula' of differential value.

Medullary thinning of long bones found by x-ray resembles the atrophy of disease.

There has been observed in amyotonia a lowered excretion of creatinine, a normal one of uric acid and phosphorus, a normal retention of calcium (Spriggs, Gittings and Pemberton, Ziegler and Pearce).

Course and Prognosis

Many cases show a gradual tendency to improve. During the early years, however, when the respiratory muscles are weak, lung infections are a constant menace and are very likely to prove fatal. Cases that succumb usually do so during the first two or three years from some intercurrent infection. In those who improve, the muscle tone gradually increases and there is recovery of deep reflexes. Severe cases of amyotonia are extremely rare in adult life, the patients must either have recovered or, much more probably, died in childhood.

Oppenheim maintains that one characteristic of the cases which he segregated and called myotonia is a progressive improvement; but the fact remains that no authentic case of complete cure has been recorded. (Porter and Carter, 1938).

Diagnosis

In a typical case having extreme degree of hypotonicity of muscles the diagnosis is quite easy. But after any debilitating illness, or in the course of such states of chronic malnutrition as occurs in cœliac disease and chronic intestinal indigestion severe hypotonicity of muscles may appear but in those cases the associated illness will serve to decide the amyotonia as a secondary feature.

The disease is to be distinguished, if at all, from the Werdnig-Hoffmann type of dystrophy by the absence of progressive advance or of marked familial disposition, and the remarkable atony of muscles without visible atrophy.

Milder cases of amyotonia might be confounded with mental defect or with rickets, although the progress of the case should remove doubt. Amyotonia is differentiated from polimyelitis by the general distribution of the paresis and absence of complete paralysis in amyotonia and from the myopathies by the absence of marked wasting and the tendency to improvement.

The unimpaired mentality is a feature which at once distinguishes amyotonia from those cases of mental deficiency associated with severe muscular atony. The condition should not be confused with Myotonia Congenita.

Treatment

It is unsatisfactory. Every effort should be made to protect the patient from respiratory infections. The recent introduction of glycine in the treatment has given promising results. The drug is given in one dose daily of 10 gm., given in a glass of milk. Its expense is a drawback, for it needs to be continued for several months. Thyroid extract has been recommended. Mechanical supports of any kind is undesirable.

Case Note

S. aged one year, Hindu female child, was admitted into the Children's Ward of Thomason Hospital with the following complaints: (1) Inability of the child to sit or stand; (2) its head could not be supported on the trunk; and (3) it did not show any movement of the limbs. These defects were observed since its very birth but the parents paid no attention on the hope that the child would recover as she grew. But to their surprise it did not show any improvement even at the age of one year although its general health and nutrition were quite good.

No one in the family showed such a condition.

On Examination—The child used to lie inert and showed no movements of its limbs except to a very slight extent at intervals of long hours. During the course of examination it used to cry and the cry was very feeble. There was no defect in the control of the sphincters, nor was there any difficulty of sucking.

Fig. 1.

When made to sit up, it used to fall forwards and resembled a frog—Batten's frog Child (Fig. 1). The limbs could easily be put into any attitude without causing any discomfort to the child. The head used to loll about and it appeared to be too heavy and drooped forward on to the chest (Fig. 2). The muscles did not

Fig. 2

show any fibrillary contractures. The deep reflexes of the upper and lower extremities were completely lost. Sensations *e.g.*, of pain and temperature, were present. Other sensations could not be tested. Electrical reactions (both currents) were reduced but not lost; and the faradic contractility was much less than the galvanic. W. R. was negative. Other systems showed no abnormality.

Unfortunately the patient was taken out of the hospital by her parents before any treatment could be given to her.

Summary

A description of amyotonia congenita has been given with an illustrative case note

Acknowledgments

My thanks are due to Major-General H. C. Buckley, M.D., F.R.C.S., C.S.I., I.M.S., Principal, Medical College, and Superintendent Thomason Hospital, Agra for his kind permission to publish the reports of the case.

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MERCURIAL AND BISMUTH STOMATITIS*

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The use of mercury and bismuth in the treatment of syphilis are as important as that of arsphenamine. Mercury is a time-honoured remedy for the infection of treponema pallidum and the place of bismuth in syphilitic therapy came after mercury. Hanxlik, *et al* (1940) think that bismuth compounds injected intramuscularly act definitely as protective against experimental and clinical syphilis and they have advised to stop medication on complaint of gastric intolerance or in case there are evidences of bismuth toxicity or unexplained systemic disturbances. The treatment should be resumed after a rest period. Goldman and Clarke (1939) reported two cases of skin eruptions with characteristics of the so-called erythema of the ninth day syndrome and these reactions were associated with bismuth injections alone. Sollmann and Henderson (1938) found that watery solutions of bismuth are better absorbed than the oily solutions. Thurmon and Benoti (1940) have shown that 40 mgm. of elemental bismuth at seven day intervals is sufficient to maintain adequate bismuth in circulation over sufficient periods for maximum effectiveness with low toxicity. Sollmann *et al* (1937) have found that in clinical bismuth administration, the total excretion as percentage injected is highest for some preparations and lowest for other preparations of bismuth and the daily excretion after cessation of injections, falls logarithmically. Benson and Robertson (1937) investigated various antisyphilitic therapy and observed that bye effects caused by heavy metals were observed after treatment with bismuth. During the last five years in the venereal department of the hospital I had the opportunity to treat over 150 syphilitics with only bismuth and mercury without arsphenamine. Ten per cent of such cases developed stomatitis and 4 per cent developed gastro-intestinal symptoms. Ascorbic acid (500 mgm.) per day was administered for two weeks without stopping the bismuth and mercury therapy and no relapse of symptoms were noticed. Lahiri (1941) found beneficial action in intolerance with ascorbic acid with combined treatment of arsphenamine, bismuth and mercury. He (1942, 1943) reported that congenital and acquired syphilitics had improved tolerance with ascorbic acid.

Observation

The present investigation has been carried out to find the underlying cause in the mercurial and bismuth intoxication in the syphilitics. 25 cases have been investigated in this series. Blood ascorbic acid has been estimated in these 25 cases by the method of Lahiri & Rudra (1943).

*Read in the second Bihar Provincial Medical Conference at Chapra on the 24th January 1943.

TABLE

Blood ascorbic acid before bismuth and mercury therapy in 25 syphilitics and the result of antisyphilitic therapy with mercury and bismuth. W. R. of blood positive in all cases.

No.	Subject	Community	Age	Blood Vitamin C in mgm. per 100 c.c.	Complication with anti-syphilitic therapy
1.	R. R. P.	H. M.	42	0·24	Stomatitis
2.	K. N. I.	M. M.	51	0·17	Do.
3.	J. M.	H. F.	37	0·21	Do.
4.	J. N. D.	H. M.	38	0·24	Do.
5.	H. C. O.	H. M.	37	0·18	Do.
6.	M. A.	H. F.	55	0·11	Do.
7.	K. M.	M. F.	45	0·13	Do.
8.	S. C. C.	H. M.	41	0·19	Do.
9.	R. R. J.	H. M.	43	0·16	Do.
10.	N. B.	H. F.	18	0·22	Do.
11.	R. P.	H. F.	23	0·23	Do.
12.	L. P. V.	H. M.	33	0·15	Do.
13.	H. R. S.	Ich. M.	24	0·18	Do.
14.	P. B.	H. F.	19	0·38	No intolerance
15.	J. G.	H. M.	28	0·41	Do.
16.	U. P.	H. M.	48	0·35	Do.
17.	U. S.	H. M.	44	0·43	Do.
18.	K. K.	H. F.	38	0·48	Do.
19.	J. P.	H. M.	19	0·50	Do.
20.	H. P.	H. F.	47	0·54	Do.
21.	A. S.	H. F.	41	0·58	Do.
22.	H. H. A.	M. M.	50	0·62	Do.
23.	H. A.	M. M.	41	0·40	Do.
24.	S. C.	M. M.	62	0·58	Do
25.	N. P.	H. M.	58	0·63	Do

CONCLUSION

In syphilitics showing very low blood ascorbic acid content, stomatitis developed when they were treated with mercury by mouth or innunction and bismuth by injection in therapeutic doses. Syphilitics thus developing intolerance, when given ascorbic acid in dosages of 500 mgm. daily by mouth for 14 days, were cured and the same treatment could be continued without intolerance symptoms by keeping the blood ascorbic acid content raised by administering 500 mgm. ascorbic acid by mouth together with mercury and bismuth therapy in the syphilitics. Marin (1941) observed mercurial and bismuth stomatitis among syphilitic patients and found low ascorbic acid content in their blood. His experience with ascorbic acid therapy in 10 cases of syphilis suggests that the acid has a detoxicating effect on the mercurial salts probably because of its reducing action. He found that ascorbic acid cured mercurial and bismuth stomatitis and it was possible to continue the serial mercury and bismuth therapy for patients who did not tolerate these metals. He also found that the oral administration of ascrobic acid was not effective whereas all my cases responded to the oral therapy of ascorbic acid. No difference whatsoever has been observed when ascorbic acid was given by mouth and by the intravenous route.

Acknowledgment—I am thankful to my Chief, Dr. H. P. Lal, for kindly permitting me to publish the case reports and to Principal, T. N. Banerji and Dr. T. N. Seth for allowing me to work in the Medical Chemistry Laboratory. I am also thankful to Mr. M. N. Rudra for guidance.

(*Continued at the foot of next column*)

USE OF SULPHONAMIDES IN OPHTHALMIC PRACTICE

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The discovery of sulphonamides is one of the greatest achievements of the twentieth century. In a previous article, (Krishna Murty, 1942) I have given an exhaustive review of the subject and it will be useless repeating them here. Here, in this communication, I am presenting my experiences as an eye surgeon in this direction. During last few years, I had the opportunity of treating many patients with the aid of sulphonamide and am now convinced that the drug should be more used in eye conditions.

Sulphonamides can be administered both internally and locally in the eye for amelioration of the symptoms. I have found a combined treatment much more efficacious than either method and it has been my method to use the drug both internally and locally. For oral use the initial dose is 4 tablets of 7½ grs each followed by 2 tablets every 4 hours on the first day; this is followed by 8 tablets a day for two more days, then a rest for 3 days is allowed, which is followed by another course. Locally the drug can be administered in three ways (1) as a powder (2) as a solution—either ½ per cent or 5 per cent in normal saline (3) as an ointment containing 6 per cent of sulphonamides. Of all these, ointment seems to act better.

Following case reports will clearly demonstrate the usefulness of the contention of the author:

CASE NOTES

Case 1. Mr. K., aged 40 years suffering from frequent redness of the eyes, watering, heaviness of the lids. *On examination* it was diagnosed as a trachoma 1st. stage.

Treatment—On alternate days the lid was touched with silver nitrate 2 per cent and washed with boric lotion. In the evening and at bed time sulphanilamide ointment 6 per cent

(*Continued from previous column*)

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applied and massaged. Improvement was noticed within ten days and the above treatment was continued for about one month.

Case 2—Miss G., aged 25 years, trachoma 2nd stage, granular condition of the lids, frequent history of corneal ulceration.

Treatment—Silver nitrate 2 per cent solution was applied on alternate days and washed with boric lotion followed by atropine drops, in the evening and at bed time 6 per cent sulphanilamide ointment applied. In the first five days sulphanilamide, six tablets a day, were given by mouth. Marked improvement was noticed within fifteen days. Treatment was continued for one month. On clinical examination the granules were flattened but were not dissolved.

Case 3—Mr. F., aged 18 years, trachoma with pannus. History of this affection for three years.

Treatment—Copper was advised for touching in the morning. Sulphanilamide 6 per cent ointment in the evening and at bed time; also yellow ointment 2 per cent. Improvement was noticed within a week. Treatment was continued for one month. The pannus disappeared, the cornea became clear. The patient was advised to continue with sulphanilamide and copper for another month.

Case 4—Miss R., aged 20 years, corneal ulcertation with pus in the anterior chamber.

Treatment. M. & B. 693 tablets 6 a day for five days. Locally, frequent antiseptic washes, atropine drops, mercurochrome drops, and sulphanilamide 6 per cent ointment at bed time. Improvement was noticed within 15 days;—pus disappeared, corneal ulcer began to heal. After fifteen days sulphanilamide cum yellow oxide of mercury was advised. At the end of one month there was marked improvement. The application of the ointment was advised for another month.

Case 5—Miss. R., aged 8 years, keratitis with complete loss of vision. Anti-syphilitic treatment was given. Locally an ointment consisting of sulphanilamide, yellow oxide of mercury, dionine and atropine was applied thrice daily and massaged. Cornea began to clear after 10 days. An improvement was noticed. The treatment was continued for two months to give her complete cure.

Case 6—Mr. R., aged 30 years, acute pain in the eyes radiating towards the forehead; iritis with past history of gonorrhœa.

Treatment. M. & B. 693, 6 tablets a day for six days. Locally antiseptic washes, atropine and dionine drops in the evening and at bed time and ointment consisting of sulphanilamide, atropine and dionine was applied. Improvement was noticed on the seventh day. Treatment was continued for one month. After one month he was advised to apply sulphanilamide cum Yellow oxide of mercury for another month.

Case 7—Mr. F., aged 30 years acute conjunctivitis.

Treatment. Silver nitrate touchings, sulphanilamide ointment 6 per cent in the evenings and at bed time. Improvement was noticed within 3 days. The ointment was continued for seven days.

Case 8—Miss. S., aged 1 year, pus in the conjunctival sac, corneal ulceration. Gonorrhœal ophthalmia.

Treatment. M. & B. 693 one tab. a day for three days and then half a day for another 4 days. Locally frequent washes, atropine and mercurochrome drops, sulphanilamide 6 per cent ointment at bed time.

Improvement was noticed within 7 days. Discharge began to decrease, pus disappeared and ulcer began to heal. The treatment was continued for 15 days after which an ointment consisting of sulphanilamide, atropine and dionine was used. This was followed by sulphanilamide cum yellow oxide ointment for another month.

Discussion

From the case notes it will be apparent that remarkable improvement takes place in trachoma and its complications with this treatment. Subjective symptoms like epiphora, blepharospasm, photophobia diminish within 3 or 4 days with improvement of vision. Conjunctiva looks paler and granules are found to be diminished in size. By the 6th day velvety appearance decreases and by the 7th day normal blood vessels have been observed on the conjunctiva over the tarsal plates of the upper lid. The vessels of the pannus become thinner and less distinct in about ten days of the treatment. Third stage of trachoma also showed some improvement but the results have been disappointing in the fourth stage of the trachoma where there is extensive scarring with entropion, ectropion and trichiasis. The same disappointment have been met with in malignant type of trachoma. In trachoma with corneal ulcers, pannus or acute bacterial conjunctivitis, improvement has been consistent. The drug also seems to be very useful in gonorrhœal conjunctivitis as in case 8. It has also been found of much benefit in pneumococcal, streptococcal and staphylococcal infection of the conjunctival sac.

Unfortunately, a controlled use of the drug, with sulphonamides *alone* could not be done but from the results presented herewith, the efficacy of the drug could be proved beyond doubt.

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MEDICAL PREPAREDNESS SERIES

The war coming on to the borders of India has revealed to us all the terrible aspects of the menace and it has become appparent that the profession shall have to take up quite a large share of responsibility in A.R.P. measures. A series of articles on war medicine, A.R.P. and allied subjects is being published with the idea of helping the cause of necessary medical education. This is the fifth article of the series.—EDITOR, *J. Indian M. A.*

MEDICAL PROBLEMS IN THE ARMY IN INDIA*

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It is a great privilege for me to have the opportunity of discussing in such a representative gathering of the medical profession, some of the medical problems that we are getting in the army, during this war.

As you all know, the medical problems of armies in the field in ordinary times centre round the enteric group of fevers, epidemics of respiratory illness and outbreaks of cerebrospinal fever. Prophylactic inoculation with T.A.B. vaccine and the discovery of M. & B. 693 have reduced the incidence of these diseases in the army. I must, however, admit that T.A.B. vaccine is not infallible but the addition of V-i strain to the vaccine in this country will, it is hoped, reduce still further the incidence of the enteric diseases.

We have found a few medical problems in the army during this war, which will be of immense interest to the civil practitioners. We have found a few diseases at such places where we could never suspect them to exist. Let me take these one by one.

Peripheral neuritis has given a good deal of trouble to the army in India chiefly because of the length of invalidism, and the confusion that exists about its ætiology. These patients are ill for months. Troop movements last year washed up a number of cases in Calcutta from various parts of India. Many had no history of dietetic deficiency, and some had been in the country only a few weeks. We found that several of these newcomers had been stationed for a short time near Poona. Diphtheria had been very common there for some months and, they contracted a diphtheritic infection of ordinary scrub sores on the legs. Three to six weeks later these men came to us with weakness of the limbs, plus a sensory ataxia. By careful cross questioning it was often possible to get a history of paralysis of accommodation from these patients. They would say that for several days they had been unable to read the paper without holding it at arm's length, or not at all. Alarmed at this they had gone to test their sight by looking out of doors and found it to be normal. This sign has been used by us constantly since last December as an important diagnostic sign for sorting out the numerous cases of peripheral neuritis that came to us. We found that Naga sore is not infrequently followed by a typical post-diphtheritic paralysis, and believe that for that part of the country the recording of secondary diphtheritic infection by inference is quite new. European troops are very liable to scrub sore in other parts of the country and it appears that any of these may become secondarily infected with *C. diphtheriæ*.

Deficiency of vitamin B_1 resulting in a dietetic neuritis was seen in some troops from China and in occasional isolated stations. This condition is well known, is easily treated, and the Indian soldier is well protected by *Ghee* in his diet. He is not so well protected as the meat eating British soldier against *the severe anæmias* that follow repeated or multiple infection with malaria, dysentery and hook-worm. In a hospital near Patna, a number of men on the brink of grave anæmia, appear to have been saved by blood transfusions and a diet rich in liver and first-class proteins given as medicine, and taken very reluctantly by the Indian patients until they began to feel the good effect. Anæmia seriously saps the will to live and I would put it for your careful consideration, whether the vegetarian farmer would not be safer with a more meaty diet when he goes to war. Eggs and fish are first class proteins, and are quite as good as meat.

If these advanced anæmia cases come into your hands you may cure them with high protein diet, and injections of liver extract, but the very bad cases will need one or two blood transfusions, and active anti-malarial treatment may be indicated.

European troops are, as you know, particularly susceptible to *Entamœba histolytica*, and I have seen by this time 26 cases of liver abscess among recent arrivals in this country. The differential diagnosis from the enteric group of fevers and from right sided lung disease has given us some trouble, and good radiology has been the chief diagnostic help.

Typhus fever has been responsible for a number of deaths in the army here. Epidemic louse-borne typhus does not occur in India as you know, and the standard classification of typhus in India (other forms) is based on less than 150 cases. Heilig and Naidu reported 14 cases from Mysore in 1942.

Last autumn the army in India recorded three small outbreaks, totalling about 63 cases. Eleven came from a camp near Bombay without serum tests, but were clinically reliable. A second collection of 33 cases was made at Ranchi. Most of these cases showed agglutination to O-X2 and had petechial rashes fading slowly. This characteristic of the rash I have come to look upon as roughly diagnostic. In Calcutta at the same time we admitted 19 cases of typhus agglutinating O-XK that closely resembled Malayan scrub typhus. A mulberry rash faded rapidly and was not petechial. Only one case from Ranchi had a petechial rash and the same case agglutinated O-X2.

The mortality in these three outbreaks was about 22%. Other sporadic cases have occurred and this disease may be more widespread and more fatal than is usually recognised. I feel myself that the appearance of this scrub typhus in an urban area like Calcutta was associated with a migration of rodents after the cyclonic tidal wave of last year. Lastly as I left Calcutta we were facing the first of the cases of *Kala-Azar* in British troops in this army area.

(*Continued on next page*)

* Read at the Scientific Section of XIX All-India Medical Conference at Patna, April, 1943.

CASE NOTE

HYDROPHOBIA AFTER ANTI-RABIC TREATMENT

J. W. PHILLIPS,

Medical Officer-in-Charge, Infectious Diseases Hospital, Gorakhpur

A young man aged about 19 years, employee of an agriculture farm, of this district, was bitten by a jackal late at night.

On examination, 5 deep bites on the head were discovered. These were, however, not properly cauterized. General health of the patient was good.

He was given a course of antirabic injections, from the very next day, 10 c.c.s for 14 days.

He complained of mild pain and an erythema locally from time to time. He was advised hot fomentation and was given a powder of calcium lactate, grains 15 thrice daily.

On the 6th day of the completion of the treatment, he was brought to the hospital by the farm engineer.

The following gigns and symptoms were found.

1. Incomplete paralysis of the lower limbs.
2. Spasms of the muscles of deglutition.
3. Salivation (though not profuse).
4. At times a sort of maniacal frenzy.
5. Fever—100°F.
6. Pulse—85 per min.

7. Parotid glands on both the sides were enlarged and there was a tenderness on the front part of the neck (they were unusual symptoms).

8. The patient was very frightened, lest he be given any further injections.

There was a history of insomnia, headache and vomiting of coffe-ground material. Duration of illness about 36 hours.

He was declared a fully developed case of hydrophobia.

It was advised that the patient be kept in a dark room, free from bright light, draught and other disturbances.

No treatment is useful in such cases except morphia grain ¼ subcutaneously to keep the patient quiet where spasms are frequent and marked and this may be repeated if necessary. The patient died within a couple of hours.

All bites on the head, face and neck are the most dangerous owing to the close proximity to the brain and large nerve trunks. In all such cases, thorough cauterization must be done and where facilities exist, anti-rabic injections started, although there is no guarantee that hydrophobia will not develop.

Hydrophobia may develop, even after quick full course of injections, though this is an extremely rare condition.

Acknowledgment—I am thankful to Dr. B. K. Chatterji, M.B.B.S., D.P.H., Medical-officer-in-charge, Anti-rabic Treatment Centre, for allowing me to send this case report for publication in the Journal.

(Continued from previous page)

A cook was admitted with fever in the typhoid ward, and, as all the laboratory tests were negative and his white blood count was low, we did a sternal puncture and found L.D. bodies. He lived with some H.A.A. gunners in a house in Calcutta with a nice garden, and, while waiting for Japanese raiders, I imagine, he sat out at the back of the house, perhaps with his cooking stoves and was bitten by *Phlebotomus argentipes*. His companion from a house next door had been in hospital some time in another ward, and was found to have Kala-Azar, and three other cases have been found since.

We hope there will not be a large outbreak, and have insisted with our own medical officers on the finding of L.D. bodies as the only certain diagnostic sign. The newest treatment at the Tropical School Calcutta has had to be abandoned because of toxic effects in favour of the more old fashioned urea stibamine, which is very successful.

We hope that the war may lead us to a preventive inoculation for *dengue* along the lines of yellow fever immunisation, and that we may also be able to trace the cause of *epidemic infective hepatitis* that is so common here and in the middle East, but I have said enough to show you that even an army doctor has his problems in pure medicine.

IX U. P. PROVINCIAL MEDICAL CONFERENCE, 1943

The Ninth U. P. Provincial Medical Conference will be held in Gorakhpur on the 30th and 31st October, 1943. There will be (*i*) a Scientific Section and (*ii*) an Exhibition of pharmaceutical drugs and other preparations, in connection with the Conference. Those who intend to read papers in the Scientific Section are requested to furnish the Secretary with two advance copies of the same. Suitable arrangements for the boarding and lodging of visitors and delegates are in progress. Detailed information may be had from Dr. J. W. Phillips, Organising Secretary, IX U. P. Provincial Medical Conference, Gorakhpur.

JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION
CALCUTTA, OCTOBER, 1943

C'EST LA GUERRE

Many of our readers were familiar with the above phrase about quarter of a century back during the last World War. Every shortcoming and defect were attributed to the War. Recently this has been revived though metamorphosed into English, "It is all due to War". Has not the war put brakes in everything we do or buy from dawn till dusk? In the eastern provinces of our country even sleep has not been peaceful. Any time it may be disturbed by the wail of the siren. About the rest less said the better. If you are feeling the shortage of quinine, sulphanilamide derivatives and meeting various spurious ineffective drugs, it is due to War. Of the shortage of rubber and petrol? We are afraid, for the former, you will have to wait till Malay is reconquered. Of the latter we refer you to the interesting discussion at Patna during the 19th Conference and published in the June number of the *Journal*. You are still asked to use "some other means of conveyance". Don't worry, the camels are coming. About us if our readers be a little patient, we will try to enumerate the difficulties of publishing a journal during War.

Have not you felt that we started slimming from the year Japan has rushed into the War? This was not intentional but essential. As a human body gradually reduces due to food shortage, we slimmed due to paper shortage. Thanks to the activity of the Association, our number of members has gone up and up but at the same time it has made our slimming painful. At one time during the year of Grace 1943, we were threatened with complete annihilation (to use a war jargon) by the commandeering order of 90 per cent output of India's paper and the blackmarketwallahs. We were somehow or other resuscitated by a windfall. But we are not steady yet. Haven't you noticed that our paper lacks the milky white freshness? Though gas warfare is still in the air, chlorine can not be spared for bleaching paper. Somebody whispers that in this country, like many other commodities, we don't even produce enough Bleaching powder! If you are above forty, we pity you, because with 8 points typesetting you are the worst sufferer. To our innumerable contributors we plead guilty for the delay in publishing their valuable contributions on the above grounds. "United we stand, divided we fall" is more appropriate during a War. Will the same principle hold good for us? Even the mail is not regular during this warfare. Priority claims have not yet been the fashion in post offices, otherwise we would have applied for it. If you had known how many times galley proofs, page proofs etc. are batted between us, press and sometimes the contributor, you would have appreciated why there is still a little delay in the appearance of the *Journal* and the importance of regular mail. How can you explain the fact, except due to war exigencies, that our members are so quickly changing places in a way so as to leave our circulation department dizzy We are sure the *Journal* will catch them in the end.

At the beginning of our thirteenth year, we ask of you a spirit of forbearance so that your criticisms will be softened by the feeling that after all it is all due to War.

DEATH FROM STARVATION

Food will win the War

—A slogan.

Calcutta, August 24[1]—In the Campbell hospital 39 starvation cases were admitted on Monday, while no new admission took place in the Behala A.R.P. Hospital. Of the admitted patients in the Campbell hospital, 12 were female, 6 children and 21 male.

24 dead bodies picked up from streets were received by the Hindu Satkar Samity and Anjuman Mofidul Islam for disposal yesterday. From among the patients admitted in the Behala A.R.P. hospital, 7 deaths took place yesterday. The total number of bodies of destitutes who collapsed on the streets disposed of by the Hindu Satkar Samity during the period August 15th to 23rd was nearly 100.

Calcutta, August 24[2]—The Mayor of Calcutta, Mr. Syed Badruddoja, sent the following cable on Monday to Mr. Winston Churchill and President Roosevelt at Quebec:—"Acute distress prevails in the city of Calcutta and Province of Bengal due to shortage of food stuffs. The entire population is being devitalised and people are dying of starvation. Appeal in the name of starving humanity to arrange for immediate shipment of food grains from America, Australia and other countries of the world."

Such is the state of affairs occurring daily in the second city of the British Empire. What about the rural areas? The condition in the rural areas must be infinitely worse. There is no way of learning the exact figures. In the middle of the 20th Century and under the rule and much advertised trusteeship of one of the most progressive countries of the world, we are witnessing to-day death due to starvation in a country which is mainly agricultural.

In our March[3] issue we remarked that we would face famine if the food problem was not solved immediately. We also stressed that starvation would bring disease and epidemics would break out. The feeding of armies is of course an important consideration in all wars but food for non-combatants in this war is as important as combatants. During these 7 months it looked that only the army marched on its stomach and there was no need to trouble about the marching equipment of those who stayed at home. Controversy reigned and propaganda tried to sidetrack the main issue—shortage of food. The inevitable has happened. People started coming to towns in Bengal to purchase rice from controlled shops and after a time when they finished the little money they had, turned beggars. Later on they starved

[1] *Amrita Bazar Patrika*—Town Edition, Aug. 24, 1943.
[2] *Idem—Ibid.*
[3] Editorial—*J. Indian M. A.*, **12**:167, 1943.

and before the eyes of every citizen, children, women and men gradually faded out and died. Government denied any shortage and accused the hoarders and profiteers. Hoarding may be possible somewhere else but on search throughout the province no large scale hoarding was detected among the people. Provincial Government blamed the Central Government for lack of supply from the surplus provinces. The Central Government pleaded helplessness in provincial affairs. The public accused the government of panicky buying, boat and rice denial policy, lack of central control and efficiency, bungling and mismanagement, and careless export. Government denied every charge and even did not recognise that starvation existed. "Does Bengal starve?" observed a local daily[4] "Why should there be starvation, this all-pervasive hunger and misery, bodies lying unclaimed in public thoroughfares, emaciated human beings searching for food in filthy dust-bins and hundreds of men and women running to and fro crying piteously for food—why should these heart-rending scenes of social wrong and inequity be enacted in the midst of this bounteous plenty? Is it then a dream, an aberration, a phantom of the monster that devours the food resources that are Bengal's? Or is it that His Excellency the Governor's Council of Ministers is frittering away these resources thoughtlessly or putting them in a hidden pool lest, as Mr. Amery once suggested, the people of Bengal should bring disease and pestilence by over eating?"

But the fact remains that people are starving. Apart from deaths due to this, living human skeletons, women, children and men with or without a loin cloth, are roaming in the villages and towns of this province. These devitalised people become the prey of communicable diseases like Malaria, Typhoid, Cholera and Dysentery. Sometimes one attack extinguishes the faintly burning candle of life. In Calcutta alone the mortality has increased alarmingly. Nobody knows the figures in the villages where more than 90 per cent of the population live. We shall see later that mortality figures from undernourishment and disease even in enemy occupied territory infiltrate outside. These figures are important because of the fact that next main crop (*aman* rice) will not be available till the end of December, 1943. If nothing is done during this period, disease and starvation will take such a toll of life in this unhappy province as has been unknown in human memory.

Let us now see and compare the food position in Europe. At the outset it may be pointed out that plans are ready to feed countries as soon as they are liberated from the ruthless Nazi mailed fist. In Great Britain during World War I, food position became increasingly alarming and grave by the autumn of 1916. In addition to the provision for shipping space for import of food materials from abroad Lloyd George circulated a memorandum embodying a few concrete suggestions on 10th November, 1916.[5] It envisaged an all round agricultural drive with modern machinery and appointment of a member to organise the food supplies including purchase, production, distribution and prices. The result in a highly industrial country was outstanding. Inspite of War the total area in the United Kingdom diverted from grass to arable cultivation was 3,381,000 acres. The crop yields in the successive sessions were as follows[6]:—

Figures in tons

Crop	1917	1918	Increase
Wheat	1,757,000	2,579,000	822,000
Barley	1,359,000	1,540,000	181,000
Oats	3,632,000	4,461,000	829,000
Potatoes	8,604,000	9,223,000	619,000

This was during the last war. Land reform and "Grow more food" campaign can be carried out if there is a will behind the propaganda even during the war. One expects better condition in England in this World War II. Moreover West[7] of the F.D.A. in an address in Baltimore U.S.A. on February 4, 1943 remarked that in 1942 "Nearly all of the lend lease food was divided between two of our allies. About 3/4th of it went to Britain or other parts of the Empire and about 1/5th of it went to Russia." There was no lack of shipping space to transfer this huge supply to Britain. But in case of India or Bengal it is different. Moreover one finds from available reports that there has been no appreciable increase in the communicable diseases or under-nourishment in England during the 4 years of War. One might pertinently ask what would have happened to the British Cabinet if people died in hundreds from starvation in the pavements of London?

Peters,[8] points out that inside occupied Holland the energy values of the legal food ration per normal consumer per day were 1,570 calories in September and 1,500 calories in November, 1942 with ration of fat and proteins 76 per cent and 43 per cent respectively below League of Nations standard. The mortality figures increased with lower energy values. The rate increased 9 per cent in 1940, 17 per cent in 1941 as compared with that of 1939. The greatest increase was noticed in the adolescent group and the percentage increase of deaths in 1941 as compared with 1939, were more marked in influenza (124 per cent), contagious disease (98 per cent), Diarrhœa and Enteritis (54 per cent), and tuberculosis (47 per cent). Babicka[9] reports that in Poland the weekly rations per person of the most important articles of food in the Warsaw Ghetto during a certain unspecified period of 1941 were as follows: Bread 14 to 15 Ozs., meat 3 to 4 Ozs., Sugar 1·5 Oz., fats ·09 Oz. Whereas in the area termed Government General each adult received about 3·25 lbs. bread a week, 3·5 Oz. flour, about the same of meat and of fats, from 3 to 4 Oz. sugar, 1·5 Oz. coffee substitute, a few pounds of potatoes from time to time and 2 eggs a month.

This diet has increased the number of deaths from tuberculosis to 8,840 in 1941 as compared to 2,850 deaths in 1938 in Warsaw out of 1,280,000 inhabitants. In Greece the condition is different. According to Massock[10], "In Athens 500 persons are dying every day from starvation. The tragedy of Greece is not so much the dead picked up in the streets each morning by motor truck and hand carts, as the condemnation to death reflected in the faces and emaciated bodies of the living.

[4] *Amrita Bazar Patrika*—Town Edition, August 13, 1943.

[5] George, David Lloyd—*War Memoirs,* Vol. I, p. 577, Odhams Press, London.

[6] George, David Lloyd—*War Memoirs,* Vol. I, p. 782.

[7] West, Dan. A.—*J. Am. Dietet. A.,* **19**:273. 1943.

[8] Peters, L. A. H.—*Ibid.,* **19**:259, 1943.

[9] Babicka, Maria—*Ibid.,* **19**:262, 263, 1943.

[10] Massock, Richard G.—*Readers' Digest,* August, Pp. 24 and 25, 1942.

Stinking, ragged columns of men, women and children, who no longer wash since there is no soap, go to the city dumps to pick over the garbage of the invading soldiers. When one finds a can that has contained food, he cleans the inside with his tongue as a cat would do." Our sympathy goes to the people of Greece. But Greece is not India. Food was rushed to Greece by the United Nations, to save the starving humanity. The pretext of it being an enemy occupied country, did not stand in the way.

We have quoted at length only to show that perhaps except Greece, in no country in Europe, conditions similar to Bengal exist. We have also emphasised that during this time except from death due to starvation, incidence of disease increases and there is a danger of epidemic with immense mortality. The public Health Department of Bengal should publish every month mortality and morbidity figures from various diseases. We have passed the period of complacency. The situation is serious with about 80,000,[11] so-called vagrants occupying the streets of Calcutta alone under the sun and the rain. One misses the enthusiasm for relief work among the people, seen during the Bihar Earthquake and North Bengal Flood. It is true that government control, lack of transport and provincial barriers of export have put difficulties on the way. On the other hand, as we go to the press, the cabinets of indecision at centre and in the province are still resorting to billy-goat tactics. A sense of frustration and tangled impotence is oppressing the ordinary individuals.

It is time for all of us, leaders and citizens, to fix our hearts beyond grocery stores and the black markets, beyond the pleas of frustration and prejudices, beyond the frantic internal politics at Calcutta and Delhi; to fix our hearts upon the chosen objective—to save the population from death due to starvation and disease. Only a *Union sacree* can do it. After all who lives if our countrymen die?

HOSPITAL POLICY IN A.R.P.

For effective and proper organisation of a Civil Defence Scheme, the role of medical and hospital services can be best explained by the following remarks of Mr. J. B. S. Haldane, F.R.S., in September 1938—"Many people at any rate will consider them far more important than the widely advertised schemes for air wardens. Personally I can dispense with the services of my local warden, as I know more than he about air raids. I cannot dispense with an ambulance, a dresser, and a surgeon, if I am hit. So I consider the poor progress of the medical service schemes in many districts as one of the most serious defects in the Government's performance."

From March, 1941, onwards, the Indian Medical Association have asked the Central and Provincial Governments in India to formulate and to place before the medical and the lay public a detailed and comprehensive scheme for the treatment of air-raid casualties amongst the civilian population. The eastern provinces of India being more vulnerable to air attacks by the enemy, the medical profession of Bengal has many times voiced its unequivocal opinion that medical men were of paramount and indispensable necessity for proper management of air-raid casualties and that the medical men of the provinces were always willing, ready and eager to help the civilian air-raid casualties with their ungrudging services.

On 27th December, 1941 the then Honourable Minister-in-Charge and the Surgeon-General with the Government of Bengal addressed a large gathering of medical men, called at the request of the Hon'ble Minister, and appealed to them to come forward and help with their services. The Hon'ble Minister also invited the medical profession to co-operate in various spheres of medical defence activities. At that meeting, with the consent of the Hon'ble Minister and the Surgeon General, a Committee was formed consisting of Dr. B. C. Roy, Dr. K. S. Ray, Dr. P. Chatterjee, Dr. S. Datta, Dr. A. D. Mukherji and Dr. K. K. Sen Gupta to act as a liaison body between the authorities and the medical public in general. After four months, this liaison Committee placed the report of the work they had done before a general meeting of medical men at which it was regretted that the help and co-operation of the Liaison Committee appointed by the medical profession and accepted by the Government, had not been made full use of by the Government in dealing with the various medical aspects of civil protection of the population of Bengal in case of air raid.

In March 1942, the Bengal Provincial Council of the Indian Medical Association drafted a skeleton scheme concerning medical aspects of Civil Defence, (*vide J. I. M. A.*—April 1942—Pp. 221-222) and forwarded to the Hon'ble Ministers and departmental heads of the Government including the Surgeon General with the Government of Bengal. In that skeleton scheme the outlines of planned medical provisions for safer receptive areas and medical aspects of civil defence measures in the danger zones of the province of Bengal were compared to those of England. In that scheme, the Government of Bengal were entreated to arrange for at least 24,000 (in place of the existing 10,000) hospital beds, necessary medical personnel, instruments and appliances and other medical amenities for air-raid casualties amongst the civilians.

For that matter the Indian Medical Association had made a rather modest request to the Government to provide for one bed for every 200 persons of the civil population in the A.R.P. hospitals at least in Calcutta and other threatened areas because the menace of enemy air raid appeared to be in no way more remote than ever before and the people might be encouraged to feel confident regarding their medical protection in case of air raids.

The Liaison Committee, gradually and unconsciously became defunct. In August, 1942, the Bengal Provincial Council of the I.M.A. prepared a memorandum on the subject and submitted it to the Government and the public (*vide J.I.M.A.*, Oct. 1942—Pp. 33-34). The above mentioned facts clearly showed that the help and co-operation sought by the authorities from the medical profession, when extended, have been treated with great indifference.

To get a correct perspective of how to solve such problems of vital interest to the nation, let us now see how and what they have done in England.

[11] Communique of the Government of Bengal—*Amrita Bazar Patrika*, Town Edition, Sept. 2, 1943.

In May 1935 the A.R.P. Department was instituted by the Home Office in England. In 1938 the Ministry of Health took over all hospital arrangements from the Home Office and the Emeregency Medical Service (E.M.S.) was established. Regarding number of beds in A.R.P. hospitals and medical personnel, on 7th September, 1939, the then Prime Minister said in the House of Commons that over 200,000 hospital beds were then ready for air-raid casualties in England and Wales and plans for new hospital units were under consideration. Out of these 200,000 beds, 56,000 were in the London region. He also said that "nearly 2,500 doctors had accepted enrolment in the emergency medical service and acceptances were being received daily." With the progress of the war, the Emergency Medical Service organisation has been expanded and at the present time there is provision for one bed for every 100 persons (approx.) of the population in the A.R.P. Hospitals in England and Wales.

Regarding recruitment of doctors, "the British Medical Association acting on behalf of the Government established a register of all men and women who would be available and appointed a Central Emergency Committee (later the Central Medical War Committee) to keep the register up-to-date. Requests for additional personnel were to be made to the Ministry through the Hospital Officer, and the Committee was to advise on the appointment of doctors so that they could be distributed to the best advantage.

In contra-distinction to the sincere efforts of the authorities in England and the close, useful and effective co-operation brought about with the medical profession by the Government, the Indian Medical Association realises with much regret that even at this hour the Government do not feel the necessity of popular co-operation in matters of civil defence. In 1942, the Government of Bengal promised to arrange for only 6000 beds in A.R.P. Emergency Hospitals in the city of Calcutta with a population of over 2 millions, but it appeared that they actually made provisions for about 4,500 A.R.P. beds in Calcutta.

Recently, however, the Government of Bengal, for reasons best known to them, reduced the existing 4000 or 4500 A.R.P. beds in Calcutta by about fifty per cent and dispensed with the services of the Visiting Medical Surgeons and Physicians attached to the A.R.P. Emergency Hospitals.

The I.M.A. views with alarm the recent circular of the Bengal Government for "Reduction of A.R.P. Beds in Calcutta" by dictating one-sided term to all non-Government Institutions apparently seeking to eliminate them from the scheme to which these non-Government institutions had so far extended their whole-hearted co-operation, and further urges upon the Government not to sacrifice the security of the citizens on the altar of ill-advised economy but to be guided by the principle of "Safety First".

We would now conclude with a simple question. At this stage of the war, when the ruthless enemy is knocking at the door of India, is it not the sacred duty of the Central and Provincial Governments to bring the A.R.P. hospital organisation up to the standard necessary for the protection of the civilian population in the threatened areas?

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From Muttra Branch:—

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2.	Dr. B. B. Sharma	„	25/-
3.	„ Bhola Nath	„	25/-
4.	„ K. C. Pathak	„	15/-
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Rupees One Hundred and Forty only.

P. B. MUKERJI,
Hony. General Secretary, I.M.A.

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P. B. MUKERJI,
Hony. General Secretary, I.M.A.

CURRENT MEDICAL LITERATURE

MEDICINE

Unusual Vascular Diseases within the Abdomen

Kimball and others (*Am. J. Digest. Dis.*, 1943:10:30) write that vascular diseases within the abdomen may give rise to acute and chronic abdominal symptoms and are often misdiagnosed or unsuspected by both physician and surgeon and may be overlooked even when the abdomen is opened. The error more often is one of *no* diagnosis than of missed diagnosis. The diagnosis could be made more frequently if the possibility of vascular disease were considered and this is specially true in the presence of acute abdominal episodes. The authors point out that the vascular origin of abdominal symptoms must be considered in presence of (1) arteriosclerosis, (2) auricular fibrillation, (3) previous coronary disease or cardiac failure, and (4) evidence of emboli elsewhere. They suggest that the laboratory tests which may give a hint of the trouble are: (1) increase in the quantitative Van den Bergh reaction—this may help in the diagnosis of mesenteric and other forms of thrombosis as it is the result of hæmolysis in an infarcted area and (2) unexplained eosinophilia—this should lead one to rule out periarteritis nodosa.

Non-Tuberculous Inflammatory Infiltration of Lung

Owen and Lenczner (*Med. Bull. Bom.*, 1943:11:260) in dealing with the subject point out that excluding amœbiasis of the lung and eosinophilic lung the German and American authors consider that 96 per cent of all non-tuberculous infiltrations of the lungs is caused by pneumococci and only 4 per cent represents different etiology which includes the infiltrations caused by pneumobacillus of Friedlander, B. typhosus, B. anthracis, B. pestis and streptococcus, infiltrates in psittacosis and glanders, infiltrates complicating infectious diseases (specially in children) such as measles, diphtheria and whooping cough, infiltrates in feeble and senile people and syphilitic infiltration of the lung. The authors further discussed in detail the three conditions which have achieved prominence recently either as a result of their increasing incidence or because modern studies have cast some light upon their true nature. These are:

Eosinophilic lung—The onset is insidious with fever, and lassitude followed in a few days by a troublesome and unproductive cough which after a variable period becomes associated with bronchospasm and typical asthmatic attacks (nocturnal). The spleen is enlarged 2 to 3 fingers below the costal margin and the x-ray films show a fine mottling of bronchopneumonic type in both lungs. The most striking and constant feature is the blood picture which shows a leucocytosis consequent on a marked increase in the eosinophile cells (it was 89 per cent in Wingarten's case reported in *Lancet*, 1943:1:104). The course of the disease is prolonged; it may last for years. Parasites have been sought for in the blood, urine, fæces and sputum with negative results. So strikingly successful is the administration of organic arsenical components that a therapeutic test is constituted. Two or three injections of neoarsphenamine or acetylarsan will abate the symptoms and six injections will cure the conditions completely.

Pulmonary Amœbiasis—In the primary type the cardinal symptoms are six in number: (1) Cough, (2) sputum, (3) hæmoptysis, (4) loss of weight, (5) night sweats and (6) evening rise of temperature. The physical signs in the lungs consist of an area or areas usually in the mid or lower zones with impaired resonance, diminished breath sounds and crepitations or moist rales. The diagnosis is suggested by the absence of acid fast bacilli from the sputum, the slight leucocytosis with eosinophilia upto 10 per cent and the presence of cystic forms of *Ent. histolytica* in stools. The affected areas may present radiologically as a diffuse opacity or as a mottling suggestive either of bronchopneumonia or of tuberculosis. The usual remedies against amœbic dysentery are most effective and once more may be regarded as a therapeutic test. Secondary pulmonary amœbiasis is due to direct spread through the diaphragm of infection from an amœbic abscess of the liver and giving rise to infiltration which may lead to the formation of an abscess at the base of the right lung. There is no recent progress in the diagnosis and treatment of the condition.

Atypical pneumonia—This often occurs in epidemics and its characteristics are: (1) Firstly a rather abrupt onset of headache, fever and malaise without any marked constitutional symptoms. (2) Transient and slight enlargement of the lymphatic glands most commonly of the posterior cervical group. (3) The development after 2 or 3 days of troublesome cough with scanty viscid mucopuruient sputum. (4) The presence of an area or areas in one or both lungs of medium to coarse moist rales accompanying breath sounds that may be either harsh or diminished and persistence of these signs in some cases even after the disappearance of the temperature. (6) Enlargement of the spleen upto 3 fingers below the costal margin. (7) An absence of any significant degree of leucocytosis with a tendency to lymphocytosis in the differential count and sometimes leucopenia. (8) A variable radiological picture showing focal distribution, perihilar and peribronchial infiltration, bronchopneumonic mottling which might become confluent and in some cases areas of diffuse opacity. (9) Complete lack of response to sulphonamide therapy. (10) The presence of variable bacterial flora in the sputum in the presence of an epidemic. Experiments to prove the presence of a virus infections have met with failure at the Haffkine Institute, Bombay. In general, the features recorded are remarkably uniform and constant. All writers are struck by the absence of leucocytosis, the frequency of splenic enlargement and the lack of response to sulphonamides. In cases where postmortem were done the lesion appeared as scattered areas of bronchopneumonic consolidation.

Treatment of Kala-Azar with Diamidine-di-phenoxy-pentane: Preliminary Observations on 32 Cases

Napier and Sengupta (*Indian M. Gaz.*, 1943:78:177) in reporting on the successful treatment of 32 cases of Kala-Azar mith diamidine-di-phenoxy-pentane observe that this synthetic product of aromatic diamidine is particularly useful in cases which are resistant to pentavalent antimony compounds and that

intravenous administration of this compound is not attended with any serious or alarming reaction as is found with diamidine-stilbene which certainly has more curtive action in Kala-Azar. The drug is to be given intravenously as intramuscular injection is very plainful. The dosage in the adult is usaully 0·025 gm. for the first injection, 0·05 gm. for the second, 0·075 gm. for the third and then by daily increase of about 15 to 20 mgm., the maximum dosage of 1 mgm. per pound of body weight is reached and this dose is continued until the end of the course. In children, somewhat small initial doses are given and the maximum is reached by small increase of 5 to 10 mgm. The mean total dosage for the ordinary case works out at 0·670 ± 0·138 gm. and that of resistant cases at 0·760 ± 0·138 gm. The results of treatment of the cases reviewed are as follws: Of 32 cases 11 were resistant, 10 out of 11 resistant cases; and 19 out of remaining 21 cases were apparently cured. In one case the drug was unsuccessful in effecting a cure and in one resistant and in one ordinary case the patient died of associated complications.

Papaverine in Heart Disease†

Elek and Katz (*J.A.M.A.*, 1942,Oct.) give below their observation on the effect of papaverine on the anginal syndrome and on premature systoles. Oral papaverine, in doses of 1½ grains three or four times a day has proved highly successful in about 75 per cent of 17 intensively studied patients with the anginal syndome. Intravenously administered papaverine in doses of 1 to 1½ grains causes a temperary abolition or reduction in the number of premature systoles, the effect lasting from two to ten minutes. It appears to be more successful in suppressing ventricular premature beats than auricular ones. For this purpose it may be given either in divided doses or in a continuous intravenous drip, diluted in saline or saline-dextrose solutions.

Oral papaverine, in doses up to 3 grains four or five times a day had a decided effect in eradicating or reducing the frequency of premature auricular, nodal or ventricular systoles in 5 carefully studied patients. In this respect its favourable action is comparable to that of quinidine. The oral administration of papaverine in heart disease is indicated in (1) the management of patients suffering from the anginal syndrome and (2) the eradication of premature beats. Its use intravenously is indicated for the temporary abbrogation or diminution of the frequency of premature systoles when these constitute a hazard (*e.g.* following a myocardial infarct) and for the alleviation of a severe paroxysm of anginal pain. There is no contraindication to its use except possibly intravenously in complete auriculoventricular block.

Papaverine is superior to quinidine because: 1. It is a potent and lasting coronary vasodilator. 2. It may be given intravenously in large doses with a wide margin of safety. 3. It has a mild sedative action. 4. It is not a myocardial depressant. 5. It does not cause the toxic signs sometimes resulting from quinidine. The only toxic effects produced by papaverine are the occurrence of sleepiness when given orally in large amounts and the occurrence of transient intraventricular and auriculoventricular block, and occasionally transient ectopic rhythms previously absent, both lasting less than one minute, when it is given intravenously. Their experience convinces us that there is no evidence of any narcotic addiction from its use. Papaverine should be employed in adequate doses, larger than those conventionally recommended.

SURGERY

Epilepsy following Application of Sulphathiazole near the Brain (B.M.B., 55)

Watt and Alexander (*Lancet*, 1942:1:493) from the Brain Injuries Unit and the Wilkie Surgical Research Laboratory at Edinburgh write that the local application to the brain of powdered sulphonamides (sulphathiazole) as a prophylactic against infection has been followed in a high proportion of patients by epileptic fits and even status epilepticus. In all cases which developed such fits the durameter was opened and sulphathiazole had been applied in the frontal region. Experimental application of sulphathiazole to the fronto-temporal region, occipito-temporal region, middle fossa of cats and dogs resulted in the development of epileptic fits. Control experiments with sulphapyridine, sulphadiazine and sulphacetamide did not result in the production of fits. The authors conclude that sulphathiazole should not be used locally in cranial operations. The epileptogenic properties of this compound do not appear to be shared by sulphanilamide, sulphapyridine, sulphadiazine or sulphacetamide.

Treatment of Superficial Tuberculous Lesions by Local Application of Promine (B.M.B., 59)

Tytler and Lapp (*Brit. M. J.*, 1942:2:748) report on the successful application of 5 per cent solution of promine in tragacanth in superficial tuberculous lesions. This jelly was applied to closed abscesses by injection after aspiration of pus (aspiration and injection of promine jelly were repeated when necessary). The jelly was applied to open sinuses by a fine catheter tied to the syringe and the application was usually repeated daily. 10 cases were treated of which 5 were closed abscesses and 5 open sinuses (4 related to spinal caries and 1 to tuberculous peritonitis). In one patient 3 separate subcutaneous abscesses healed completely within two weeks from the first injection. Other results were less striking but in general were considered more favourable than might have been expected from orthodox treatment. Abscesses remained flat after one or more treatments or healed, leaving fibrous residues. Sinuses decreased steadily in depth and some were almost healed after two to four month's treatment. The authors point out that the results justify more extensive use of this method of treatment in the dispensary of tuberculous cervical adenitis with abscess formation, obviating the need for operative treatment.

Treatment of Leg Ulcers with Blood and Plasma†

Naide (*Am. J. Med. Sc.*, 1943, April), writes that leg ulcers in patients with peripheral vascular disease are notoriously difficult to heal. Many methods have been attempted. Since ischæmic ulcers could not be supplied with sufficient blood through occluded arteries, the idea suggested itself to the author of withdrawing blood from the patient's antecubital vein and applying it directly to the surface of the ulcer. The method consisted simply of dripping or spraying the blood on the ulcer

and allowing it to clot. With this simple method, ischæmic ulcers were healed which had failed to heal by other methods. Relief of pain and subsidence of reaction in the tissue around the ulcer followed the first or second application in most patients. Nine of 15 ulcers, refractory to other treatment, were healed, 2 were improved and 4 failed to heal. The author believes that this method may prove of value in the delayed healing of other wounds in which impoverished nutrition may play a part.

Irradiation Treatment of Cancer of the Lip†

Schreiner and Christy (*Radiology*, Sept., 1942) report that from January 1, 1926 to December 31, 1935 the records of the State Institute for the Study of Malignant Diseases revealed 636 cases of cancer of the lip treated by irradiation. In a review of the experience of these cases, the authors found an absolute cure rate for the total series of 58·9 per cent. If the patients who died of intercurrent disease with the lesion healed at the time were eliminated, together with those that were lost from observation with the lesion healed less than five years, the cure rate was 74·4 per cent. Of 27 patients with positively proved metastatic lesions treated with radon seed and radium needle implantation and with high-voltage x-rays, only 2, or 7·4 per cent, remained well five years or longer. Of 11 patients with proved metastatic lesions treated with high-voltage x-rays or radium pack alone, none survived. Of 10 patients with metastatic lesions diagnosed clinically but not proved histologically, treated with radon seed and radium needle implantation and external irradiation 5 died from the disease, while 5 are alive and well. Nine patients with metastatic lesions diagnosed clinically but not proved histologically, treated with high-voltage x-ray or radium pack alone, are alive and well.

A Study of Tetanus and Its Treatment with Magnesium Sulphate

Ghosh Dastidhar (*Indian M. Gaz.*, 1943:78:73) from a review of 211 cases of tetanus including 56 in newborn, treated with combined method of administration of small quantities of antiserum and magnesium sulphate with sedatives observes that the results so obtained are encouraging, that intramuscular injection of a 25 per cent solution of magnesium sulphate controlled the spasms effectively and produced no ill-effects and that the administration of bromides, chloral hydrate and also minute quantities of morphia prolonged the period of relaxation. The routine treatment adopted is as follows: On admission a search is made of wounds, otorrhœa, etc. and 9000 international units of antitoxin is injected intramuscularly round the wound and the injection is repeated after 48 hours. Wounds are treated with hydrogen peroxide, dilute Condys' lotion or dilute E. C., whichever is available and dressed with sterile dressing soaked in dilute E. C. For the removal of the foreign body the wound should be explored under anæsthesia. A mixture containing chloral hydrate grains 10, potassium bromide grains 10, syrup simplex drachm 1, water to ounce 1 is given with glucose and sedatives by drip method are given at regular intervals. All cases receive as a routine intramuscular injection of a 25 per cent solution of magnesium sulphate, adults receiving 5 c.c. intragluteal twice daily and children 4 c.c. to 2 c.c. twice daily. In severe cases with frequent spasms morphine grain ¼ with atropine grain 1/100 is also injected once or twice a day and 50 c.c. of a 25% glucose is administered intravenously after each morphine injection. Otorrhœa is treated by cleansing the ear with swabs soaked in hydrogen peroxide and with mercurochrome drops. In puerperal sepsis vaginal douche with dilute Condy's lotion is necessary.

Pholedrine in the Prevention of Operative Shock*

Landau and others (*Lancet*, 1942:2:210) write that in old or anæmic cases or long and extensive operations, the onset of severe shock is a probable complication and its control may be a matter of much anxiety. The authors have used pholedrine (originally introduced under the trade-name Veritol), prophylactically to prevent the onset of shock in such cases. The object of treatment was to maintain the blood pressure within 10 to 15 per cent of the normal pre-operative level. A falling blood pressure was taken as an indication of developing shock and sphygmomanometric estimations were repeatedly made at 10 to 15 minute intervals. Pholedrine was found to have a longer and more definite action than other vasopressor substances tried. It can be given subcutaneously, intramuscularly or, if rapid action is desired, intravenously. Administration of pholedrine may be repeated many times without suppression or weakening of its action. There was also no reactionary fall in blood pressure after the stimulation had ceased and the blood pressure readings remained remarkably constant post-operatively.

The authors used pholedrine both with inhalation and spinal anæsthetics. The method of administration with spinal anæsthesia was as follows. Pholedrine 0·5 c.c. (presumably of the 2% solution supplied for parenteral use) was given 10 minutes before injection of the spinal anæsthetic. If there was a marked fall in blood pressure a further 0·5 c.c. was given subcutaneously. If the fall of blood pressure was more profound 0·25 c.c. was given intravenously followed by 0·5 - 0·75 c.c. subcutaneously. Throughout the operation any tendency to fall in blood pressure was restored by small injections subcutaneously or, with lower blood pressures, intravenously. In this way the blood pressure was maintained.

Details of 10 cases are given and the authors draw the following conclusions: In the attempt to avoid irreversible and profound shock by maintaining the blood pressure as constant as possible and restoring it to normal as soon as possible, pholedrine has been found of great value. It was, however, of little value if profound or irreversible shock had already developed. The administration of pholedrine does not replace adequate pre-operative preparation of the patient and the blood volume must be maintained during operation by transfusion of

Fatigue Fracture of the Tibia*

Hartley (*Brit. J. Surg.*, 1942:30:9) reports that he first noticed the rare and interesting condition of "fatigue fracture" in the left tibia of a boy of 18 in 1931. In the present paper is recorded what is believed to be the first series of cases, collected over a period of 10 years, of "fatigue fracture" seen in England. The total number of cases was 14, and their ages varied from 7-20 years. In 3 patients the condition was bilateral.

The lesion is not associated with any demonstrable abnormality in the bony skeleton, nor with rickets, syphilis, tuber-

culosis or other systemic disease. It is 4 times as frequent in males as in females. The lesion varies from a minute interruption of the cortex to a clearly defined area of osteoporosis extending from the posterior surface of the tibia through 4/5 of the bone depth. It lies between 5 cm. and 9·5 cm. below the knee joint, depending on the age and height of the individual. Callus invariably forms round the site posteriorly and laterally. Resolution occurs spontaneously provided the limb is immobilised, but if untreated there is danger of complete fracture of tibia and fibula (as occurred in one of the author's cases). The only constant symptom is pain in the calf area, to one or other side of the upper end of the tibia. Clinical findings are negligible and there is no local or general rise of temperature. The patients are most frequently sent for radiological examination suspected of suffering from osteomyelitis. The diagnosis is radiological and is made on the basis of the following observations :—

1. A minute cut seen in the cortex, usually with a bead of callus around (to be seen only in perfect radiographs). 2. The narrow transverse area of osteoporosis, extending across the tibia, 5 to 9·5 cm. below the knee joint. 3. Callus posteriorly and laterally; seen to increase in extent and organisation throughout serial films. 4. Absence of longitudinal extension of osteoporosis or of necrosis. 5. Similar findings at the same site in both tibiæ.

Etiology—In the absence of evidence of systemic disease or of infection locally in all 14 cases, and from the invariable site of the lesion, it is believed to be essentially a fatigue dystrophy similar to "march-fracture" of the metatarsal.

The differential diagnosis lies between :—1. Simple incomplete or torsion fracture. 2. Looser's "Umbauzonen." 3. Osteomyelitis. 4. Sarcoma. The importance of early recognition lies to-day in :—1. The saving of valuable time in recruits (to Infantry Regiments in particular). Failure of diagnosis results in loss of man-power. The case mentioned above was discharged from the Army after 9 months' treatment. 2. In preventing needless operation—therefore needless risks in young persons. 3. Where treatment is begun early, excellent and rapid functional and structural results are obtained.

Treatment—Immobilisation for weeks or months, depending on the severity and extent of the radiological findings. Operation is not yet proved to facilitate recovery.

PEDIATRICS

A Clinical Study of Gastroenteritis in Children

Chaudhuri (*Indian J. Pediat.*, 1943:10:5) from an analysis of 140 cases of gastroenteritis admitted into the Chittaranjan Sishusadan, Calcutta, during the period of from July, 1938 to Dec., 1941 observes that younger the infant, more prone he is to get the infection, that the mortality is higher in younger infants, that the peak months of incidence were at the beginning of summer in March, during monsoon in August and at the beginning of winter in October, that most of the cases came from the families of lowest income group, living in the slums of the city, that 47·3% of the cases were entirely breast-fed for over 6 months, that most of these cases were profoundly underfed, malnourished and showed both outspoken and latent signs of nutritional disorders and that only 46 of 140 cases (32·87%) showed some specific protozoal or helminthic infections (Giardia lamblia having heighest incidence of infection *viz.*, 14·3%) and the cases where no infection was found were perhaps due to dietic errors and that clinically the cases were classified into: 1. Acute (*a*) severe and (*b*) mild and 2. Chronic types. The presenting symptom in all cases was diarrhœa. In acute severe types it was associated with profound systemic disturbances, such as vomiting, high temperature, retention of urine, cyanosis, drowsiness and some times collapse. In chronic types diarrhœa is associated with marked wasting and nutritional disorders. The total mortality was 44·3%, in acute severe cases 70%, in chronic cases 32% and in acute mild cases 18%. The prognosis was very grave in young infants. It was dependent on nutritional condition, age and virulence of infection and was equal in both breast-fed and artificially fed. *Treatment.* Preventive: Children are very susceptible to adult infections, specially influenza and cold. They should be kept as far as possible in well-ventilated and well-lighted rooms, properly clad and protected from draught. Proper feeding should be done so that the nutrition condition is maintained at the optinum level. Breast feeding should be encouraged and continued for 6 months. Weaning must not be done prematurely. But it must be emphasised and explained to all mothers that milk diet is not an adequate diet after the child is 6 months old and mixed diet must be given at this age and after, in order to assure perfect health and freedom from infections. Utmost care should also be taken in the collection, storage and preparation of infant food. *Curative:* Drugs play a very unimportant role in the treatment of gastrointestinal diseases; only in specific infections such as amœbiasis, giardiasis, etc. drugs are useful. The most important measure to be taken is to maintain a balance between the fluid loss and fluid administration. The type of fluid and the method of administration will depend on the condition of the patient. For the treatment of diarrhœa reliance should be had on diet. The aim is to get rid of the offending food material and also the culture media of bacteria from the gastrointestinal tract. Starvation and elimination are necessary. Starvation under no circumstances should be continued for more than 48 hours and during this period also sufficient fluid, barley water, glucose water must be given. The fluid requirement is 2-2½ ounces per pound of body weight. The next stage is to introduce therapeutic dietary—mother's milk, butter milk, protein milk, skimmed milk in proper quantity and also should be continued only for a limited period and must be followed by normal diet.

Subcutaneous Nodules in Rheumatism

Banerjea (*Indian J. Pediat.*, 1943:10:41) writes that rheumatic infection, specially rheumatic heart disease is not uncommon in the tropics as was thought to be a decade ago. The incidence is 39·5% in Kutumbia's series of 1,155 cases in Madras, 21·5% in Fernando's series in Ceylon and 44·6% in author's series of 717 cases in Bengal. Out of 717 cases of heart disease seen by the author during the period of 1936-1943, 320 cases had rheumatic eitology and of these 181 were in the age group of 0-20 years (rheumatic infection is most common at this age period and rheumatic nodules and chorea being evidences of acute rheumatic infection are much likely to occur

in this period of life). The review shows that the incidence of subcutenous nodules was 8·27%, that nodules developed more frequently in the ages between 11 and 15 years during an exacerbation of a prolonged rheumatic infection associated with subacute or chronic heart disease. The nodules in most cases were seen around the elbows. The next frequent sites were tendons of feet and ankles, knees, tendons of fingers, forearms and wrists. The nodules specially the tiny ones, are best seen by "putting the skin on the stretch when the nodules lift and blanch the skin." The nodules vary in size from that of a pin's head to that of a bean. They are usually slightly moveable, hard and painless. The number of nodules varies from one to hundred. As subcutaneous nodules develop in most cases during the active exacerbations of a prolonged rheumatic infection it is very likely that such patients would show evidences of progressive cardiac lesions and other rheumatic manifestations such as polyarthitis, tonsillitis and chorea. These nodules usually appear in successive crops, each crop lasting from a few days to a few months. The prognosis of these nodules is influenced by several factors such as age of the patient, size and number of the nodules and the presence of associated cardiac lesions. Large nodules and multiple nodules usually make the prognosis bad. The subcutaneous nodules *per se* do not require any special treatment. The cases should be treated along the usual lines for acute rheumatic infection by absolute bed rest and adequate dosage of sodium salicylate. The associated congestive failure should be treated with appropriate doses of digitalis, venesection and oxygen inhalation; anæmia should be corrected by adequate iron therapy, tonsillar sepsis by surgical removal when the activity of infection has subsided. The diet should be small, easily assimilable and non-fermentable and should contain sufficient vitamin C. The author concludes by noting that rheumatism in Bengal, if not in India, follows closely that in the temperate zones and its essential clinical features including the occurrence of subcutaneous nodules, are also similar.

The abstracts marked with an asterisk (*) were received through the courtesy of the British Empire Information Service, 3 Hanover Street, London, W. 1. and those marked with a dagger (†) are through the courtesy of the United States of War Information, 293 Hornby Road, Bombay B.M.B. is the abreviation used for British Medical Bulletin—EDITOR, *J. Indian M. A.*

XX ALL-INDIA MEDICAL CONFERENCE, AHMEDABAD

Office :—Surgical Hospital & Radium Institute, Ellis Bridge, Ahmedabad 6

DEAR DOCTOR,

The Local Branch of the Indian Medical Association has invited the XX All-India Medical Conference to be held at Ahmedabad during X'mas week this year. This is the third session of the Conference to be held in this Province and it will be for the medical practitioners of the province to extend their hospitality to our professional brethren from all over India. It is hoped that you will give us your whole-hearted co-operation in making the session a success.

The Conference discusses subjects of professional interest in its scientific, social and economic bearings and records its decisions in the form of resolutions, which, by reason of their being the voice of the largest professional organisation in the country, command prestige and status in all matters medical.

The minimum fee for membership of the Reception Committee is Rs. 15|-, fixed this time in consideration of the prevailing economic conditions. Any sum over Rs. 15|- that you may choose to pay towards this worthy cause will, however, be appreciated. We also invite your personal co-operation in enlisting as many medical men as members of the Reception Committee as possible.

Yours sincerely,
R. A. DESAI,
Chairman, Propaganda & Publicity Committee.

DEAR DOCTOR,

An All-India Medical & Scientific Exhibition will be held at Ahmedabad during the X'mas week of 1943 in connection with the above Conference. It will provide an unique opportunity for manufacturers of various pharmaceutical products, medical and surgical appliances and scientific accessories to exhibit their commodities before a large gathering of medical men from all over the country.

Besides this, the representatives of the different firms will have ample opportunities of personal contact with the delegates and visitors to the conference, which is a fundamental and an essential factor for establishing and expanding business. Ahmedabad being one of the leading and most important business centres of India, this exhibition will give a simultaneous access to both the medical and business circles, the benefits whereof will be incalculable.

Firms intending to participate in the above Exhibition may communicate at an early date with the Hony. General Secretary, XX All-India Medical Conference.

Yours sincerely,
MOTIBHAI D. PATEL,
Hony. General Secretary.

CORRESPONDENCE

The Editor is not responsible for any views expressed by contributors—EDITOR

ADMISSION INTO MEDICAL COLLEGE

The Editor, *Journal of the I. M. A.*, Calcutta.

Sir,—I wish to take up a little of your valuable time, I hope you will spare it and go through these few lines.

I am a Private Medical Practitioner of about twenty years standing. I conduct a Maternity and Nursing Home. I am now getting old; and naturally, I wish now that my son should take up my place.

My son is an averagely talented healthy lad of 19. He has up to now no failure in the University Examination. He appeared and passed his J. B. Sc. Exam. this year.

He applied for admission to both the Medical Colleges in Bombay, last year after passing his I. Sc. as well as this year. He could not get admitted.

The minimum requirement for admission to a medical college is passing the I. Sc. with B. group. It can never be the lot of all students to get a class, in our university exams. If once a student passes the I.Sc. examination, but does not get a class, he can never get admitted to a medical college under the present state of affairs. If he were to fail, he can try again to secure a class, but if he commits the sin (!) of passing, his chances are barred.

The same fate for the B.Sc. as well; and this is the fate of my son. He passes without a class; therefore he shall not learn medicine!! Therefore his father should sell his practice to some one else or close it!!!

Now sir, is this right? If not, who is responsible? what way is there for such a lad to obtain medical degree?

(i) If for the medical course the university keeps an entrance examination, and passes only as many students as there are seats, there may be some hope, though this method has its serious defects.

(ii) Why should not the medical college increase the number of seats? They can allow 3 or 4 students to form a group for dissection or for clinic, so long as the war continues, and thus do it? Where there is a will there is a way. More colleges may be opened later on.

But who is going to think of the disappointments of an Indian student? Who cares for the frustrated hopes of an Indian parent?

Will you kindly try to solve the problem and make matters move if you can?

Thanks, I am, etc.

Gadag D. V. Chafeker, B.A., M.B.B.S.
15-8-43

VEGETABLE OIL *vs.* GHEE

The Editor, *Journal of the I. M. A.*, Calcutta.

Sir,—The prices for ghee (clarified butter) have risen by 100% and they are still going up. It is difficult for a man of moderate means to purchase this important article of food. Naturally the eye of the householder turns towards the vegetable products made from edible oils. Unfortunately a lot of propaganda is carried out in the past against the use of vegetable product in this country. In the anti-ghee adulteration conference held in U.P. in the year 1941, an eminent scientist of the Benares University claimed that 'Vegetable Product is indigestible and it passes as a ballast from human alimentary system'. On writing to the gentleman in question, to quote authority for this statement, he remained silent. Two subsequent reminders to him failed to bring me any reply. The existing literature on the subject does not substantiate this view. Vitamin A contents of ghee are very small. The process of manufacture of ghee and long storage destroys most of the vitamin contents of ghee. The question of comparative digestibility of ghee and vegetable product are of great importance. My inquiry on this point indicates that vegetable product has practicaly the same food value and is quite harmless. Besides, vegetable product manufactured by some respectable firms contain sufficient quantity of vitamin A as well as D, the former of which is existing in a very small quantity, the latter not existing at all in ghee.

It would be of interest to the public if you or any of your readers will enlighten the public on this matter. I am etc.

Surat Borough Municipality A. H. Patel, D.P.H. (ENG.),
3-8-43 D.T.M. & H. (ENG.), etc.

XX ALL-INDIA MEDICAL CONFERENCE, SCIENTIFIC SECTION

OFFICE: Surgical Hospital & Radium Institute Ellis Bridge, Ahmedabad—6.

DEAR DOCTOR,

The next All-India Medical Conference will be held at Ahmedabad during the coming Christmas week. As you are aware, these conferences offer unique opportunities for interchange of views on matters relating to the practice of the profession and its upliftment; and, with this end in view, a Scientific Section will be organised during the Conference week.

Papers on scientific and professional subjects are invited to the Scientific Section of the Conference and those intending to read papers are requested to send the titles thereof at an early date. The attention of all medical practitioners is drawn to the following resolution of the XIX All-India Medical Conference held at Patna:—

"That in order to stimulate intensive study and research on Puerperal Sepsis, the control of which is of vital importance to the nation, this Conference recommends to various medical institutions in the country to undertake detailed investigations of this disease in its different aspects, bacteriological and clinical, and to make available to the profession their findings in this respect. This Conference recommends to the Indian Medical Association to offer a medal or prize for the best paper on the subject to be read at the next session of the All-India Medical Conference."

Dr. K. S. Ray, an Ex-President of the I.M.A. has offered a gold medal to be presented to the author of the best paper on the subject containing record of original work. It is realised that the time at your disposal is short but matters have taken a course so far in a manner which precluded an earlier notification. Thanking you in anticipation for your whole-hearted co-operation which alone can make the Conference a success that it deserves.

Yours sincerely,
G. B. MANKAD
Chairman, Scientific Section.